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Made out of Whole Cloth.

THE enterprising but not over scrupulous reporter, who hunts sensations, and when they are lacking invents them, has been stirring up the rubber shoe men. In the first place he craftily paves the way by the following innocent item:

The two kings of the rubber goods world, E. S. Converse and Joseph Bannigan, are together in London watching the movements of Vianna and the course of the goods market. An agreement is looked for.

A few days later he gives to the papers the country over something like this:

An immediate advance in the price of rubber boots and shoes was indicated by a dispatch which said that Joseph Banigan had arranged with Mr. Converse to buy rubber for the Boston Rubber Shoe Co. through his Pará house and to sell the entire product of the Woonsocket and Boston companies through the same agency. These large companies have been in active competition since the liquidation of the Boot & Shoe Selling Co. in 1886.

The next news that is gathered on this topic is authentic, as it comes from the interested parties themselves. From Boston comes the word:

Costello C. Converse of the Boston Rubber Shoe Company, emphatically denies the report that a consolidation has been made between the competing rubber houses. Mr. Converse says the report is made out of whole cloth, and has no foundation whatever.

The reporter still trying to fill space and keep the sensation before the public, interviews the Woonsocket Rubber Co., and got the information that:

Messrs. McElroy and Ballou of the Woonsocket Rubber Company stated that they knew of no such arrangement, and Mr. McElroy said there was nothing in it.

Rubber Goods at the Columbian Exposition.

IT has been suggested that it would be advisable for the leading houses in the rubber trade to make some concerted movement looking toward a special exhibit at the coming World's Fair, of rubber manufactures in a single collection, building or inclosure. The suggestion has come from a gentleman who desires not to be quoted, and whose wish will, therefore, of course be respected.

We shall, however, briefly set forth some of the arguments for the advisability of an organized exhibit; and though these may not command approval when everything connected with the subject has been duly considered, it can do no harm to open discussion and direct thought to the suggestion.

First, it is asserted, as the result of all experience in large expositions, that goods, machines, and manufacturing process pertaining to any special department of industry, can be much more efficiently shown when grouped together, than when they are distributed among and in departments to which they are foreign or are only collateral.

For example, an exhibit of rubber shoes in a department of boots and shoes, naturally being of much less magnitude than the rest of the display would therefore be in some measure overshadowed. Or, a better illustration still, a line of rubber packings grouped in with railroad supplies, to which department of trade it could be considered as collaterally belonging, would in such a classification be much less likely to make a good showing and be thoroughly inspected, than it would be were it placed side by side with others in a large and fine collection of rubber goods exhibited by itself.

Random display is disadvantageous to the exhibitor, as rendering it more difficult for those particularly interested in any line of exhibits to find what they desire to see. Anything that facilitates the finding of that which is to be exhibited or which lessens time and effort in inspection is as much an advantage to exhibitors as to the public.

Again, the magnitude and commercial importance of any particular industry is more adequately indicated by an imposing group than by scattered exhibits; and as one of the important results sought in the Chicago display is to enable a just comparison of American and foreign industries to be made, this is considered an argument in favor of an organized exhibit.

The boot and shoe trade seems to have adopted these views, since it has organized for a special exhibit. Most of the other important interests have taken similar action.

Some inquiry made of leading houses in the rubber trade develops the fact that nothing has been done toward bringing about the special display suggested. Few have yet given much thought to the question of exhibiting their manufactures, and fewer still have arrived at definite conclusions as to what they will exhibit. Nearly all approached are entirely non-committal upon the advisability or practicability of grouping rubber goods together, and those who have expressed any opinion positively object to being quoted.

Some have advanced in a tentative way the opinion that manufacturers of first-class goods might object to having them placed side by side with those of inferior quality and of lower price, but which, to the inexpert observer, look just as good as the better quality. The force of this view is not apparent, since, if both classes of goods are simultaneously exhibited the question why a higher price is demanded for one than the other is sure to be asked, and will demand an answer, just as much if the goods are separated as though they are contiguous.

Economy of space might, we should think, result from an organized exhibit if no other advantage could be gained. It does not seem worthy of so important an industry as the manufacture of rubber has become, to be represented at so great a commingling of international commercial interests as the Columbian exposition will be, in a merely "go-as-you-please" fashion. For our part we should like to see a magnificent group fitly representing the great rubber industry of the United States, and the commercial ability as well as the enormous capital engaged in the business.

Rubber Syndicates.

THE daily press has been more than usually busy during the past month with reports of alliances made in Europe, which, if true in their full detail, would largely affect the rubber market. One of these reports was that Baron de Gondoriz had formed an alliance with the Barings and some Liverpool merchants, by which he could control absolutely the Pará market during the present and the coming season. This is true so far as concerns the receipts of the present crop, which now is substantially closed. This movement on the part of the Baron allows him to use all his capital in the handling of the coming crop. The stocks of Pará rubber in England in first hands were August 1, 1535 tons, and of other sorts 1472 tons, total 3007 tons. In this country there were August 1, 1183 tons of Pará and about 700 tons of other sorts; total, 1883 tons. Less than five per cent. of Pará is held outside of the syndicate. The successful placing of these stocks releases a sum of money, say in round numbers $3,000,000, and of course allows the Pará syndicate so much more with which to enter their fall campaign. In pursuance of this agreement a shipment of two hundred tons has been sent to Liverpool, and within the past few days a round lot, seventy-five tons, of coarse has been sold at 55 cents.

The other rumor was that the presidents of the two largest New England companies had formed an alliance against the Baron to purchase their rubber jointly and directly from the Amazon through La Roque Costa & Co. in Pará. Some color was given to this rumor from the fact that the firm in Pará had recently become a broker to some extent to one of the parties by reason of an imperative change having to be made in its buying. With the other company the firm is well known to be the buyers in Pará. Reasoning from what was thought to be known to the unknown, an advance in prices of shoes was to be made, but the story was denied from beginning to end in an authoritative manner, and so the reporters who had so bravely marched up hill fairly slid down again.

A Useful India Rubber Cement.

IN order to fasten glass letters, figures, etc., on glass (show windows) so that, even when submerged in water for several days, they will not become detached, use an India rubber cement. The best for this purpose consists of one part India rubber, three parts of mastic and fifty parts chloroform. Let stand for several days at a low temperature to dissolve the cement. It must be applied very rapidly, as it becomes thick very soon.

An Assam Rubber Plantation.

A PLANTATION of India rubber was started by the government of Assam in 1873 in a forest at the foot of the Himalayas. Seedlings were planted in the forks of trees, and by 1885 they had reached the ground. The trees were subsequently placed in beds, forty feet wide, protected by the surrounding forest. In 1890 the plantation extended over 1106 acres, and contained 16,045 healthy plants, besides 84,000 seedlings. The experiment will not begin to be profitable until after several years more.

THE Pará rubber shoe factory at South Framingham, Mass., which had been closed since May 29, resumed full operations August 3. The resumption of work had in it a theme of joy and gladness to the workingmen and denizens of the town in which the mill is situated.

Obituary.

MR HENRY SMYTHE, the well-known rubber broker, died suddenly of heart trouble at Dublin, Ireland, July 22, 1891. Mr. Smythe went abroad a few weeks ago for an extended trip in Europe, and having some business in London, proceeded there first. Not being in very good health, it is presumed that with his usual activity, he performed his work with more celerity than prudence; for he began to complain of illness, and went to Dublin, his native place, where he died in his hotel, so suddenly as to be almost without medical attendance.

Mr. Smythe was born in Dublin, Ireland, in 1828, and received an university education. He came to this country in 1859. At first he acted a ship-broker, but with the advent of the steamship lines he abandoned that business, and became a metal broker. He afterward took up drug business, making balsams a specialty. He pursued this with such a reputation, as to be styled the "King of the Cocoa Market"; having skilfully manipulated the Vanilla bean market several times. In 1872, his attention was attracted to the India Rubber Market, and finding only one competitor, he formed an alliance with Mr. Joseph Earle, who then was a young man just entering the business. Later Mr. William Earle joined them. These relations lasted for some time, but latterly he associated himself with his son, Mr. Henry H. Smythe, and a large business, representing houses in London, Liverpool, Havre, and Hamburg was built up, and this firm continued during the remainder of his lifetime.

Mr. Smythe came from an excellent family. His father was Lord Mayor of Dnblin for two years, having been elected to that position in 1824.

Mr. Smythe was a thorough business man, amiable and open hearted, and possessing the reputation for wit common to his countrymen. He was indefatigable in his activity, and even when ill, he seemed to be tireless. His acquaintance was world wide. His reputation was spotless. The business of the firm will be continued under the same name by his son Henry H. Smythe.

BURRITT M. HOTCHKISS.

ON Sunday, July 5, Mr. B. M. Hotchkiss, assistant superintendent of the I. R. Glove Co., died at his home in Naugatuck, Conn. He was born in Prospect, Conn., and while a young man moved to Bloomfield, Iowa, where he remained a few years and then returned to Naugatuck. At this time he connected himself with the Glove Co., which was then but a small concern, employing less than a dozen hands, and occupying the little red mill that still fronts the imposing brick buildings of the present plant. As officer, stock-holder and active worker in the rubber mill, Mr. Hotchkiss spent forty-seven years. Until last winter he was almost always to be found in the factory office at nine in the morning. The last few years of his life his duties were of the lightest, yet he seemed to enjoy the regular routine of the mill, and followed it as far as he was able. A serious attack of pneumonia last winter came very near proving fatal, but he recovered and again put in an appearance at the factory office. Of a kindly disposition, Mr. Hotchkiss possessed many friends and was quite prominent in the town where he spent so large a portion of his life. He leaves two sons, both of whom are in the rubber business. Mr. Robert E. Hotchkiss, Superintendent of the Boston Rubber Co., Chelsea, Mass., and Mr. Frank D. Hotchkiss, Superintendent of the Fairfield Rubber Co., Fairfield, Conn.

Every-day Work in the Factory.

BY NICK R. AUGUR.

IT often occurs in the rubber business that the same man will want to know how to do something, and a little while after will ask how not to do the same thing. This may at the first look seem to be a bit unlikely, and yet it is susceptible of proof. To prove it properly let me quote from a letter but lately received:

"Can you tell me what I can put on iron to keep rubber from sticking to it? I have had a deal of trouble of late in getting moulded goods out of the mould. For instance, I had a large ball to make out of a very light compound. So I mixed one of cork and rubber according to receipt given me by an old rubber man. Of course, I looked for it to be all right, but it wasn't by a long sight; in fact, I was unable to get it out of the mould at all. In my striving I broke the ball in two, and then had to fairly drill the stuff out. I asked the giver of the recipe for a wash of some sort to keep the rubber from sticking, and he told me it was a secret preparation and he could not give it away. Then, too, comes up another difficulty, I want to get something that will make rubber stick to iron. Don't laugh, please, and ask if I haven't got it in the cork and rubber compound; for, as true as you live, that blessed stuff slips off from an iron roll as if it were greased, when I want it to stick."

Our friend is evidently struggling with mighty problems, and it may give him a grain of comfort to know that more than one well-furnished manufacturer has sweat over the same questions, and not solved them in a moment either. In the first place, to help him out of the trouble where the obstinate rubber insisted on sticking, had the inquirer ever worked in a rubber mill, he would doubtless have been more or less familiar with a preparation known as "sliokum," and its making would not have been shrouded in mystery. To solve this problem let us give him a simple formula: Take five pounds of soap that contains a goodly percentage of soda, shave this up as finely as is convenient, and add to it an equal quantity of soft water, then boil the compound until it has the consistency of soft soap. Apply with a brush to the moulds when hot, and the rubber will indeed be obstinate if it manages to stick to your moulds. If you are about to make hollow work in white, it will be sufficient to dust the goods in talc and also to powder the mould with the same, which will be effectual in avering all of this trouble.

Now then, you want to know how to stick rubber to iron, and have it stay there forever and a day. Well, time has been when that too has been most eagerly sought after by the wisest among the manufacturers. Indeed that secret, and later the various patents that cover the point, have been worth fortunes to the possessors. To begin with, you must get every particle of grease off of, and out of, the iron. To do this, it will usually be necessary to dip it in acid. After this bath, be careful that no sweaty hands touch the metal, for where the print of the fingers remain, the rubber will not remain, but will be loose and peel off. If it can be conveniently done, plate the iron with a thin

film of brass, and then see if the rubber does not stick. For one situated as I presume you are, I must say that I think it useless for you to spend much time in trying to do work that calls for much of this sticking. There are others fitted up expressly for this work, who know its ins and outs, and of the latter there are not a few, and who do it cheaper and better than you can hope to in a long time. Why not do work of a simpler kind, and turn this over to those who make a specialty of it, and get your commission for so doing? Still, it is not for me to advise on this point, as you have not asked for it. Let me hear from you again, and if that which should stick doesn't stick, and that which shouldn't stick still sticks, I will gladly tell you what more I know on this most important subject.

Letters to the Editor.

Better Spend the Money on the Exhibit.

EDITOR INDIA RUBBER WORLD: Of late I have heard but little about the part the rubber manufacturers are to take in the coming World's Fair. Why are they not bestirring themselves? It struck me the other day that it might be a good thing for all concerned, if one of the rubber associations in this country should invite leading rubber men from England, France and Germany to be their guests for a week or so, and show them the Fair. Do you not think it would be a good advertisement for our manufacturers?

Very truly, R.

New York, Aug. 2, 1891.

Asbestos and Rubber Hose.

EDITOR INDIA RUBBER WORLD: Can any of your readers tell me if there is, or ever was, a rubber hose made in combination with asbestos or other non-conducting material; or rubber packing combined with asbestos? And if so where should I apply for further information? W. H. M.

Brooklyn, Aug. 6, 1891.

Rubber Culture in Trinidad.

THE cultivation of the India rubber tree on the island of Trinidad is receiving much attention. A few trees of different varieties were imported some years ago and were placed in the botanical gardens. The results have shown that the soil and climate are remarkably favorable to their cultivation.

RUBBER men around town recall reminiscences of Charles D. Mead, a dashing manufacturer of a quarter century ago. He was at one time wealthy, but being a high liver, and adventurous in business his fortunes rose and fell with the seasons. He first started the Mercer Rubber Co. at Hamilton Square in New Jersey. This was late in the fifties. He then built up the Mead Rubber Co., placing his energy and fortune with it in 1863. This was afterward the Star Rubber Co. Then he started the Hamilton Rubber Co., and again in 1871, we find him with the Trenton Rubber Co., the factory of which was burned down three or four years later. His death took place in 1878, closing a career remarkable in his day, and leaving behind a memory of many deeds of benevolence and a record of indefatigable labor. To him is popularly ascribed the introduction of the jar ring now considered so necessary in the routine of preserving fruit.

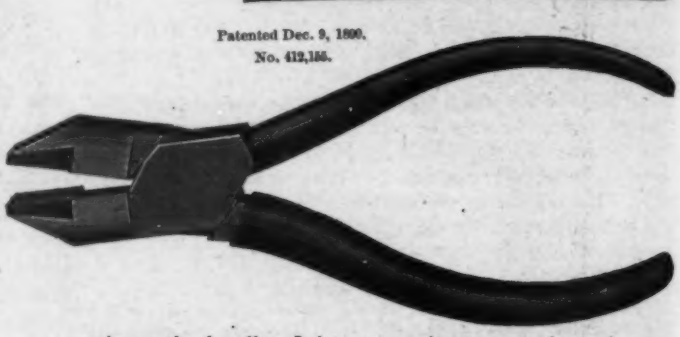
New Goods in the Market.

TO MANUFACTURERS AND PATENTEES:

It is our aim to embody in this department descriptions and illustrations of all the latest novelties introduced in the market, to the end that jobbers, retailers and buyers of rubber goods generally may look here for information as to everything new that each month or season brings forth. Manufacturers and patentees are, therefore, most cordially invited to co-operate with us in making the department as complete and attractive as possible—the distinct understanding being that no charge whatsoever, either direct or indirect, will be made for these publications. Our reward will come through giving our readers valuable information; and that will be reward enough if manufacturers but give the information freely and in all cases at the earliest practicable moment.

In forwarding descriptions of new goods, be careful to write on one side of the paper only; be brief, but always write enough to give the buyer a clear idea of the article you offer; give your full address, plainly written; and in all cases send a small illustration or wood cut if you have one.

THE INDIA RUBBER WORLD has before spoken of the advantages of insulating tools for electric work. From the patentee of the Rubber Plier Handle we have the accompanying cut. Its advantages are: It is very easily slipped upon the metal handle; made of a good rubber compound it gives a safe and durable insulation. It gives the hand an excellent



Patented Dec. 9, 1890.
No. 442,155.

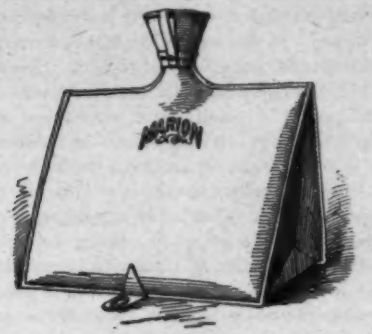
grip on the handles. It has at once become popular and quantities are sold, all of which are manufactured by Spinney, Virtue & Co., Lynn, Mass.

—The accompanying cut represents a rubber soap-dish, and when one thinks of the unwieldy crockery that is noisily making contact with marble and other lavatory appurtenances it is surprising that it has not been thought of before. For camp and yachting life it is, of course, just the thing that we have been

looking for. Clean, tasty, and unbreakable, it has claims for popularity beyond the comparatively few who now know of it. The Seventh Regiment of New York, we believe, have the credit of introducing it to the camping world. It is made and sold by the Hodgman Rubber Co. at 25 cents each.

—An indispensable household article is the Marion India Rubber Hot Water Bottle. The conveniences and results of its

use are remarkable. In the old style, to place the soles of the feet on the bottle, the knees had to be brought to an upright position; something not always desirable in the sick-room.



And to obtain heat for the body, the oval bottle had to be placed on the person. As a bottle with two quarts of water weighs five pounds, this was objectionable; besides, the old-style is oval, and of course does not have the heating surface of a flat bottle. To overcome all this, Mr. Hessen produced a bottle, which we illustrate above. The heat can be applied to the body without pressure. For a foot warmer it is perfection. The nozzle is placed on top so as to prevent leakage. This bottle is now extensively used among the trade.

—The Smith Hose Attachment and Swivel is an arrangement to quicken and secure a tight joint of garden hose or other hose. The hands are not soiled with mud and water, as by the present method, no screwing together of parts being necessary after the ring is once put onto the city's connections. The washer cannot be lost out, as it is bound down by the ring and is not carried about in the hose. The bend on the attachment allows the hose to lay parallel with the lawn and saves it from being broken where it bends to the ground, where most breaks occur. With the swivel joint the hose can be turned from one part of the lawn to another and not get kinked and broken. No. 2 has the same advantages and is used for a down discharge from a hydrant or sill-cock. Screw the ring on to the usual place of attachment until the washer is pressed tight. The more the rubber is compressed the more secure the joint. Screw the attachment into the old coupling on the hose. To attach for sprinkling, engage the stiff hook under the flange of the ring and draw straight across, until the spring hook catches. Unhook and it will fall apart. No leakage at 200 pounds pressure. These articles are manufactured by C. L. Smith, Cleveland, Ohio, and are for sale by J. Francis Hayward, 160 Congress St., Boston, Mass.

—The description of the patent rubber-handle screw-drivers that was printed in the July INDIA RUBBER WORLD, told of a valuable invention, and one that electricians have heartily endorsed. Unfortunately, however, the printer put with it the wrong cut, representing a screw-driver to be sure, but one about

which there is no rubber handle, nor insulating tube. The above is the illustration that should have been inserted, and represents an article that is patented and manufactured by Spinney, Virtue & Co., Lynn, Mass.

—The accompanying cut represents a new solid rubber barrel top rest to be used in carriages. It is generally known that a small arm extends from the seat rail to the point on which the bow of the top turns, and that this also performs the function of a rest for the top when it is turned down. This rest is usually composed of a leather cushion attached to the main portion of the rest. Several devices are used with the view of keeping

the upright from abrasion. The rest under consideration has the advantage of being solid, and of being constructed of rubber, which makes it more yielding than if it were made of leather. The washers are made of soft steel and are japanned, which arrangement not only protects the ends of the rubber barrel, but gives a nice finish to the rest. It is manufactured by the Dash and Carriage Goods Co., of Cincinnati.

A Strike at the Stoughton Rubber Works.

TWENTY-ONE men employed in the mackintosh departments of the Stoughton Rubber Works, are on a strike because of alleged unfair treatment. The superintendent of the Company in a recent letter thus explains the matter:

"A committee of five for the department had agreed to make an order for one single kind of coat, which the company was figuring on, at a reduction of from 90 to 80 cents per coat.

"After the order had been taken, they refused to stand by the agreement made by their committee, and were consequently refused work until they were ready to do as they had agreed.

"The men were earning from $2.50 to $4 per day.

"The amount of reduction involved on the whole order was a total of about $50. After completing the order the company stood ready and willing to do what was fair by the help and just to themselves.

"IRA F. BURNHAM."

The Almy Water Tube Boiler.

ALMY'S Patent Sectional Water Tube Boiler is constructed of wrought iron or steel steam pipe either ordinary or extra strong. Manifolds and all other fittings inside of casing are of malleable iron of extra strength. Manifolds are placed on each side and back of firebox below grate line. The manifolds at top are on each side and at front. These manifolds are connected by pipe sections with unions at top and bottom. The side sections are vertical to the height necessary, then horizontal to centre of boiler. This forms crown of fire box, then back and again vertical on line with lower section to top manifold. The back section likewise vertical till above the side horizontal section, then horizontal across them, then returning over themselves, then, repeating the return, they connect with top manifold at front. Sections are composed of two pipes running parallel, connected to a Y, fitting at top and bottom. This makes a straight tier of pipe very close together, forming a water wall on three sides of firebox, also enabling strength of manifold to be thoroughly maintained. This arrangement presents a heating surface to the radient heat in fire-box of 75% more than is possible to a flat surface of the same cubical capacity. The grate area of this boiler is equal to 75% of floor space occupied by boiler. For "Marine Duty," an ash-pan is bolted to casing, brackets being provided as feet for boiler support. In "stationary work" a foundation wall of brick 8 inches thick and 16 to

20 inches high receives boiler; the space beneath boiler and between walls forming ash pit. On top of boiler proper, in line with top manifold, is placed the "water heater," composed of sections of pipe in one or more layers connected at one end with water supply and at the other to lower manifold. Between and over these layers of water heater must pass all products of combustion previous to their final exit to smoke-stack. A mud drum to receive all precipitation is placed mid-way at bottom of back manifold. The boiler is now ready for casing, no support or bracing being required, as it is self-sustaining and self-supporting. The casing is made of sheet steel lined throughout with asbestos, the firebox in addition being lined in front with firebrick. Casing made in sections and bolted to angle iron, can be unbolted at any section for repairs. The height of boilers is in accordance with size and requirements. The feed water, entering the large pipe or drum below the level of the grate at each side of boiler, passes upwards through tubes; the steam drum extends about the sides and front of boiler at top; the steam is discharged into the separator. Entering the separator, the current of steam with what water may be carried with it, rushes around. The water by its greater density being swept to the outside of the involute coil within separator drum and bringing up against the solid partition, while the steam continues onward through the involute coil to the centre. The same action is repeated, the water being continually thrown out by centrifuga action as the steam is swept through the spiral to the centre, and when the steam is finally withdrawn at the top of the separator the water will have been left against the walls to find its way back to the large drum below, whence it will be carried into the water circulation. This construction makes it easy to remove parts of the boiler for inspection or repairs. Symmetry of design is combined with freedom for expansion and strength. It affords great power in small space; no explosion is possible with the slight radiation, so that it can be safely placed very near beams, joists or wooden partition. It can be placed on any floor high or low, and with ash-pan as for marine use attached is safe as a parlor stove. This boiler can be used for emergency purposes as a boiler for a fire pump, being capable of raising steam from cold water in equal time with a first-class steam fire-engine when fire is laid for that purpose. These boilers are designed for 250 pounds per square inch steam pressure, having been approved by the Board of Supervising Inspectors of the United States. The office of the Almy Water Tube Boiler Co. is at 47 Clifford Street, Providence, R. I.

Singer Button Machine.

OF the different sewing machines on the market the Singer Sewing Machine Co.'s Button Sewing Machine, represented in the cut, will commend itself for its usefulness to the manufacturer of garments. It is adapted to two-hole, four-hole buttons, etc.; is readily adjustable to all lines, forms, and sizes of buttons; gives an absolute uniformity in appearance and strength, and can be set for any desired number of stitches. It has a stop motion, a tension releaser, and foot lifter; in fact, unites all appliances for decreasing the work required of the operator and increasing the capacity of the machine. Button machines possess the peculiar advantages of decreasing cost, increasing strength and the finish, and obviate the handling, wrinkling and soiling of the garments. To over-riveted buttons this machine will give strength and freedom from rust, with an inability to remove or replace the button. It is in use bhundreds of clothing dealers.

AN enormous fountain of naphtha has just been tapped in the neighborhood of Baku, Russia. The new fountain is of unusual size, and has recently been throwing up naphtha at the rate of about 5000 tons a day. It pours out in such immense quantities that it has formed a small river. Crowds of people have been flocking to Baku to see the stream, which is probably worth several millions of roubles to the company that discovered it. As a result of this stream having been tapped, the price of naphtha in Russia has fallen some 30 per cent.

Current Gleanings.

BY LIGHTNING ARRESTER.

EXPERIMENTS for the observation of the effect on insulating substances of high tension alternating currents are the order of the day. A few years ago a pressure of 2000 or 3000 volts was considered very high, and manufacturers of insulated wires found some difficulty in turning out a grade of insulation that could safely be guaranteed to stand such pressures for any length of time. The situation was met in earnest, and nowadays no insulated wire manufacturer hesitates to guarantee his cables for far higher pressures. Some two years ago a cable was made in New York to withstand a pressure of 7000 volts, and to-day cables are manufactured that will successfully withstand a pressure of over 10,000 volts.

* * *

Mr. Ferranti, of London, was the first to propose the use of a current at a pressure as high as 10,000 volts for the actual commercial distribution of electricity for lighting purposes, and although there were many who prophesied that his plant could never work successfully, they have all proved to be false prophets, because the mammoth Deptford central station has for some months past been transmitting current to London through about nine miles of cable at a pressure of 10,000 volts. In London this pressure is reduced by means of transformers to 2000 volts, and then again at the consumers transformers to 50 volts, the working pressure of the lamps. The Ferranti cables are of the concentric pattern, the two conductors being insulated from each other by layers of paper saturated with a pitch-like compound. The manufacture of the mains is carried on at the Deptford station and forms an important part of the company's work. So far no trouble of serious nature has been experienced with the cables.

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The experiment about to be tried at the Frankfort Electrical Exhibition of transmitting power electrically from water falls, distant some 180 miles from Frankfort, involves the employment of a very high pressure to avoid too great a loss in the conductors. The line current will have a pressure of 30,000 volts, something far exceeding any pressure that has hitherto been used on a working scale. The line is entirely overhead, so that the question of cable does not come in at all. The insulation of the line is effected by using insulators having inner receptacles filled with specially prepared oil, and the transformers are also immersed in oil in order to fortify the insulation on the wires.

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Some very interesting experiments with high tension alternating currents have recently been carried out by Messrs. Siemens and Halske, the well-known cable manufacturers of Berlin. From their observations and experiments Messrs. Siemens and Halske have come to the conclusion that among solid insulating substances the only one which can be used to withstand the strain of a current of very high pressure is vulcanized rubber. For this class of work, however, the rubber must be be vulcanized in a special manner, and by dint of much experimenting Siemens and Halske have evolved a process of vulcanizing which enables them to produce rubber of such high resisting power that a very slight thickness will stand extraordinarily high pressures without breaking down. A proof of this was given by submitting a sheet of rubber vulcanized by the new process, the thickness of the rubber being only .006 of an inch, to a pressure of 20,000 volts. The rubber was not pierced by the current, nor did it show the slightest sign of damage or alteration. Of course, the exact nature of the new process of vulcanizing has not been made public, and very naturally, as, if there is as much in it as is claimed and the results are always certain, it must be a very valuable trade secret. The fact that such important results can be obtained by merely varying the process of vulcanizing should certainly induce other manufacturers of insulated wires to experiment on their own account.

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A number of trials of various insulating substances were made for the sake of comparison. A 25-horse-power alternate current dynamo, giving a pressure of 1000 volts, furnished the necessary current, the pressure being raised to 20,000 volts by means of a transformer. After trying the sheet of rubber several cables were tested, the insulation of the cables being of the same class of rubber; one cable broke down at a little over 16,000, and others stood the full 20,000 volts without giving way. An overhead line strung on the oil cup form of insulators was tested, and the insulators stood the test successfully. A sheet of compressed cardboard about .004 of an inch thick broke down at 2000 volts, and a plate of glass of the same thickness broke down at about 10,000 volts.

* * *

The experiments with heavy oils were of particular interest. Heavy oils have been highly recommended and very freely used of late for the insulation of lines and cables, one of their best qualities being the non-absorption of moisture which they exhibit. From the trials at Berlin, it appears that although oil is an excellent insulator, when once the current has passed through by a disruptive discharge, its insulation resistance is very much reduced. If the oil broke down the first time at a pressure of 20,000 volts, on the second application of the current it would break down at about 4000 volts. The reason for this is quite simple. By the passage of the current the oil is decomposed just where the destructive discharge takes place. The action of the current causes a small quantity of hydrogen to be given off, and little particles of carbon are left in the oil to mark the path of the discharge. As these carbon particles have a relatively low resistance the current is naturally attracted by them, and the cable is then broken down by a much lower pressure than that required to produce the first discharge.

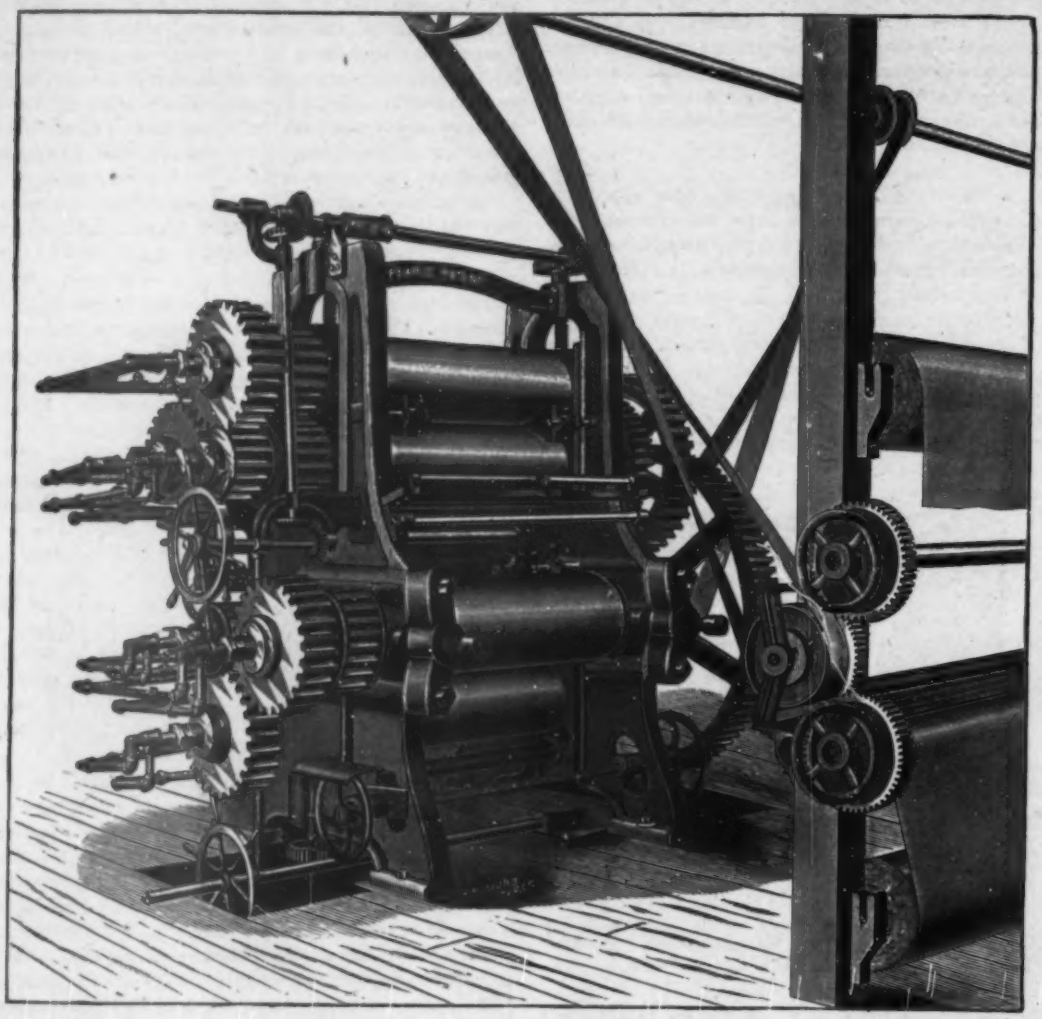
* * *

A patent has lately been taken out in England for a new insulating material which is prepared in the following way: Some fibrous substance is saturated with a drying oil (preferably linseed oil, previously partially oxidized by heating for some hours with litharge or other suitable oxidizing agent), and then drying. This process is gone through again and again, until the substance has increased in weight by at least 50 per cent. Amalgamating rolls running at a high speed are then brought into play, until a smooth and homogeneous mass has been obtained. Some 25 per cent. of gutta percha or India rubber is then added, and the mass subjected to the action of amalgamating rolls until it is capable of being formed into a block, or rolled out into thin sheets. The fibrous substance used as the basic material may be wood fibre, hemp, flax, jute, cotton, or silk.

THE Magnolia Anti-Friction Metal Co. have issued a beautiful banner in color representing the emblem of the company,—a magnolia. Its artistic qualities are such as to suggest the frarance of that flower. The same company some time ago published a waltz with some music of such a good quality that now the bands include it in the repertory played in Central Park. Of course it was published for the secondary purpose of calling attention to their metal, but, doing everything as well as they can, the firm built better than they anticipated, and issued a sheet of music that struck the popular vein.

A Six Roll Double Friction Calender.

A NOVELTY in calenders for coating fabric with India rubber upon one or both sides is shown in the subjoined cut. It is the invention of John H. Pearce, of New Haven, Conn., and the machines are supplied to the trade by the Birmingham Iron Foundry, of Birmingham, Conn. Either of the above may be addressed concerning prices, shop rights, etc. The advantages claimed for these machines have been fully tested by two calenders now in successful operation, and are briefly as follows: 1. The two coats being laid on simultaneously thereby saving one operation. 2. Doing the same amount of work as two single coating machines. 3. Requires no more labor than one machine on the old method. 4. Doubling the production at 50 per cent. less cost in labor. 5. Greater elasticity in finished stock. 6. A superior surface to the stock thereby insuring smoother goods. 7. A more uniform weight or thickness of stock is obtained. 8. It occupies no more space and requires no more power than a single coating machine. 9. This process consumes less gum per yard than the old method, and in no way sacrifices quality of stock. On a run of 5000 yards it can be shown that the saving in stock is from $40 to $75, according to the quality of the stock used. 10. When it is desired to coat only one side of the goods two rolls may be run at once, thus doing the work of two machines. 11. The machine is not limited to "friction" coating only, but may be used to friction coat on one side, and calender or smooth coat upon the opposite side. 12. The machine can with care run 15 yards of light sheeting coated both sides, per minute. 13. Accompanying this machine is a new and improved wind-up or take-up apparatus which can be located in any convenient place. By this arrangement much time and stock can be saved, and there is no necessity of stopping the machine to remove the roll of finished goods.



Worth More Than Fine Pará.

THE burnt rubber used for the final polishing off of the gold lettering, etc., is simply India rubber which has been subjected to a peculiar fire process that makes it very spongiose and absorbent. So remarkable is its latter quality that a chunk of it as big as three of your fingers will take up more than $15 worth of gold in its pores. When, after some months of use, such a piece of burnt rubber is loaded with all the gold that it will comfortably carry, it is sent, with a lot of others in the same condition, to the Mint to be assayed.

DANIEL HODGMAN.

Pioneers of the Rubber Trade.

DANIEL HODGMAN.

DANIEL HODGMAN, the subject of this sketch, and a pioneer in the rubber trade, was born at Mason, N. H., August 19, 1808. His parents were of hardy New England stock, and the youth was indentured at an early age, as was the custom in those days, to a farmer near by. This occupation, from its limited scope was, in a certain sense, distasteful to him, but that young Hodgman was faithful and a hard worker is attested by the fact that the farmer was so well satisfied with the natural ability of the youth that he advanced him $500, a large sum in the early days of New England, to open a thread and needle store in Roxbury, Mass., now a part of the city of Boston.

Boston in those days was a Mecca for the ambitious youth of New England, but young Hodgman, in seeking the city, miscalculated his temperament, which was totally unsuited to the humdrum life of a petty notion store, and in a few months' time he found himself forced to retire from his new vocation. With little means left, he had to do something, and that quickly. He at once made up his mind that it would not be a return to farming life but an essay of the great metropolis of the country,—New York. Coming here among strangers in 1830, he obtained employment in a grinding mill in Twenty-Seventh Street, and in this modest way he started anew. Five dollars per week made a modest beginning for an ambitious boy, but there was nothing else for him, and patiently and faithfully the task was taken up with a hope for better days.

In 1838 he thought he saw his opportunity, and with the carefully husbanded savings of his weary years of toil he launched his little bark on the seas of independent metropolitan business life. Still, he had much to learn, and it was a lesson in human nature this time. Opening a store in Beaver Street he associated himself with a partner; an unsatisfactory arrangement that was soon terminated. In 1840 we find him in the old Howard House in Broadway, near Maiden Lane. In a year's time he took a store on the corner of Broadway and Maiden Lane; again, in 1843, in Maiden Lane, between Broadway and Nassau Street. In 1844 his ambition carried him up-town to Chatham Street, but he found himself ahead of the times, and failure was the result. With an instinctive idea well-drilled into him, that a failure, small or large, was only an incident, we find him next year measuring off the milestones of life in a humble basement in Nassau Street. Now it was a spring for success, if ever; and with nothing but a passion for indefatigable labor and a character well moulded by the vibrations of his checkered life, he sturdily went on in his small way, and thereafter without a halt carved out the business which stands as a monument to him to-day. In a few months he had more pretentious quarters on the corner of Maiden Lane and Nassau Street, where he remained until the time of his death. Mr. Hodgman was strictly a business man, and there were not many incidents in his career except those that come from patience, perseverance, enterprise and a love for hard work. As a pioneer in the unknown paths of the rubber manufacture these qualifications stood him well in hand, and there was time for little else. Who it was that started the first rubber factory in the United States has been a matter of argument, but Hodgman's manufactory dates from 1838, and to him has been given by many this credit. He had an inventive faculty, as is evidenced by a patent given him in 1841 for a life-preserver. Some of his old circulars give an impression of his enterprise. In one, mention is made of 110 articles that he is prepared to furnish to New Yorkers.

The outsider often in this day jumps to the conclusion that that number embraces all the articles of rubber now manufactured. Under the Goodyear plan of giving a certain line of goods to manufacture to one person he obtained that of door-springs, an article much in use in those days and not altogether unknown now. During the stirring times of the war when rubber men were seeking large contracts he kept the even tenor of his way. Clothing he always made, and as he could not use the Goodyear patent his skill and ingenuity was put to the test to keep up his goods to a quality second to none. As he approached the age of 60 his health became impaired, and he was obliged to relinquish more and more the cares of business. In this condition of life he was fortunate in that his three sons, two of whom are now living, had followed in his footsteps; and they now became his capable lieutenants. His visits to the factory and store became less frequent; and at the age of 68, in 1874, he died at Tuckahoe, N. Y.

There are few people now living who were contemporaneous with Mr. Hodgman in the rubber business. The expression of one of them, however, tells a part of the story of his success. "He was in business integrity the cleanest of clean men." In other words, a merchant of the old school, whose word was as good as his bond. That was his reputation in those days when the business was not on the solid basis it is now. An officer of one of the leading companies, in his reminiscences of Mr. Hodgman, says he was an industrious, patient, care-taking man. When he was given the door-spring business by Charles Goodyear, it was considered a little, unpretentious line, but as the months rolled on, every one began to wonder at what was being made of it. The number sold was very large, and as he was by nature retiring, it was difficult to trace anything to him until the result came staringly forward.

He was a generous man and possessed an unusual warmth in his family ties. He could not be called a social man; he was too retiring for that, but in his own way he became well and reputably known, and his business career was never tarnished by any petty act that would not bear the searching light of public criticism. He left to his family, which consisted of three sons and two daughters, a good competency and that which they value more, a great business, and sons and grandsons are all possessed by the single aim of making the name of Hodgman a synonym for as good as can be found in the rubber line. Three generations have now built up a business which the fourth and fifth will have no reason to remember with any other sentiments than those of pride and respect.

Contractors at the L. Candee Factories.

THE contractors of L. Candee & Co. have undergone a cut of 20 per cent. in their earnings recently. This affects all of the cutting, cementing, skiving and strap and buckle departments. The new rate was accepted by the various contractors, who were given distinctly to understand that under no circumstances were the help under them to be cut in wages in consequence of the reduction. The reduction will continue in force for some time at least and probably for all time. The contractors have been making from $35 to $45 per week, and the cut is therefore not so extensive as it would seem to the outside world.

In order to bring the help in the various departments more in contact with the firm it seems to be the policy of the company to do away with all the contractors and have the various departments run by foremen instead of contractors.

IT is estimated that the supply of Pará rubber on the market outside of the syndicate is less than 175,000 lbs.

Sulphur for Rubber Men.

RUBBER men use a considerable quantity of sulphur which has to be prepared for them in a peculiar manner. Occasionally a manufacturer will give an order to a broker for a lot, and the latter, through ignorance or cupidity, will get an article unsuited to the uses intended. In the first place, sulphur for rubber men, must be submitted to a process which entirely frees it from acid which would be deleterious to manufactured goods; and secondly, it must be reduced to an impalpable powder, in order to allow of a ready mixing with other substances. Hard rubber men are more particular in this respect than those who confine themselves to the manufacture of soft rubber. The reduction of sulphur to this powder is done by passing it through a very fine silk cloth procured in China. As the rubber industry only consume a small percentage of refined sulphur few manufacturers take pains to keep the particular sort desired in stock, and to buy it promiscuously means, as a rule, disappointment. An extra price is charged for this additional care. Sulphur men say this increased cost is more readily paid by hard rubber men than by the soft, a fact which leads to the belief that the necessities of the former class are greater in this respect.

While there are mines in Utah and California from which crude sulphur can be obtained, the product is so impure as to be practically unfit for use, and the great bulk is imported from Sicily, the fissures of volcanic craters being its natural lodging. At the present time the price is comparatively high for the crude, fluctuations having been very rapid, and within the past six months extreme quotations have been made. Manufacturers say that the price at one time lately was the highest ever known. From these high prices a reaction has taken place, but even now it is from five to seven dollars per ton higher than in prior years. Dealers now believe that quotations are on a more steady basis, that there will be no further material advance and that there will be no serious decline.

As a rule, rubber men buy in small lots, from one to five barrels at a time, but Western manufacturers sometimes take advantage of low rates of freight, and then a car load is bought. No attempt is made to take advantage of fluctuations in prices, and, lately, this would have been impracticable. There is no difficulty, however, in storing refined sulphur.

Among the manufacturers who give special attention to the refining of sulphur for the use of rubber men are Battelle & Renwick, and T. & S. C. White, of New York, to whom we are indebted for many of the facts contained in this article.

Litharge Will Be Just as High.

THE officers of the National Lead Trust announce that a special meeting of the stockholders will be held August 27th, to vote on a proposed plan of reorganization which has already been approved by the trustees.

The trust controls nearly all the lead crushing plants in the United States, has large interests in linseed oil mills, and is also interested largely in the smelting and crushing of gold and silver ore.

The trouble with the Lead Trust, however, is two-fold. It is largely over capitalized, and is handicapped by the unpopularity of trusts in general. The plan to scale down its nearly $90,000,000 of stock and to abandon the trust organization has been under consideration for several months, and as it has been unanimously approved by the trustees will doubtless be sanctioned by the stock-holders.

President W. P. Thompson said: "We have now an extreme capitalization of $89,447,600. According to prevailing prices, the value in the stock market to-day of our property would be only $15,000,000, although the company has more than half that amount in actual cash in use in its business. I think, for the benefit of all stock-holders, the stock ought to be put on a solid basis. I have endeavored to have this done ever since I made my annual report."

The form of reorganization is as follows: A corporation is to be organized under the laws of New Jersey, and acquire the properties now held in trust by the trustees of the National Lead Trust, the new corporation to have a capital of $30,000,000. of which $15,000,000 shall be cumulative seven per cent. preference stock and $15,000,000 common stock. There shall be issued $3,000,000 six per cent. debenture bonds of which $371,364.25 is to be used for the redemption of mortgages on real estate, and $149,487.36 to reimburse the trustees for cash paid for properties acquired since the organization of the trust. All the shares of the preference and common stock of the New Jersey corporation are to be transferred to the shareholders of the National Lead Trust in the proportion of one share of the seven per cent. preference and one share of the common stock of the New Jersey corporation for six shares of the National Lead Trust.

Rubber in a Fireworks Factory.

IF there is an important industry in the country in which India rubber cannot be made to play an important part, it would be interesting to hear of it. The making of fireworks, for instance, would not suggest to the average reader any use for rubber, but it seems that such a use does exist, and that not an insignificant one. Eleven large manufactories in this country are rapidly monopolizing the fireworks business, which formerly consisted only of importations from China and Japan. The largest of these concerns occupies thirty-one acres of ground at Graniteville, Staten Island, its success being due largely to a successful discovery in the making of a safe explosive. The mixers work in a room carpeted with rubber, upon which they walk only when wearing rubber shoes. Thus all danger of accident from treading upon any of the mixture spilled upon the floor is avoided.

Cativo Sap. Compounded with Rubber.

THE sap of the mangrove—the *cativo* of the United States of Colombia—may be incorporated with rubber in varying proportions to produce permanently elastic waterproof compounds. These compounds are, on the authority of *Spon's Workshop Receipts*, capable of vulcanization either with or without the addition of whiting, white lead or other ingredients. The compounds of rubber with *cativo* are easily dissolved by rubber solvents, to form varnishes. The *cativo* is fluid at 130° F., but, by raising it to a temperature a little above 212° F., its natural odor which is objectionable is reduced in strength, and the substance becomes so fluid that all mechanical impurities may be separated from it by filtration. The substance then acquires a clear reddish brown color. In this state it may be incorporated with rubber either by the employment of solvents or by kneading the ingredients at a temperature which gives a sufficient plasticity.

Vulcanizing the compound with 5% sulphur results in a strong elastic product. By using a larger percentage of sulphur, a harder material is obtained,

Hard Rubber Beginnings.

HARD rubber, before the invention of Nelson Goodyear, was substantially an unknown factor in the industries of the civilized world. Before this time, however, Thomas Hancock in England had been experimenting with a view to obtain this substance. As early as 1843, this inventor obtained a sort of a hard rubber by using special proportions of sulphur under various degrees of heat in a combination of caoutchouc, with various substances such as silica, plumbago, etc., a process which he describes as changing the character of the gum entirely, which, of course, was vulcanization. His process was to immerse the caoutchouc in melted sulphur and heat it in an oven or by water or steam so that a temperature of 400 degrees is reached. The result, as stated, was that a substance was formed which was no longer affected by temperature, or the usual India rubber solvents. At first the rubber was elastic, but he discovered that by exposing the substance to higher temperatures, for a long time it assumed appearance and density of horn, and that it "could be pared with a knife similarly to that substance."

Evidently he did not deem that discovery of a great deal of importance for he subordinated what there was in his discovery to an invention he procured at that time for waterproofing cloth and leather, discarding the extreme results and making use of one or two of the details which led up to the hard rubber in order to secure his objects in another direction.

In 1846 Charles Hancock claimed that he could manufacture gutta percha into hard substances by confining the mass in moulds and subjecting them to a high temperature for several days.

Undoubtedly the world was too engrossed with the progress being made in vulcanization at that time for hard rubber as we understand it to come to the front.

William Brockedon and Thomas Hancock in 1846 started out to claim the earth and obtain a blanket patent. They claimed somewhat vaguely in one of the clauses in a patent given them that by repeated immersion and drying of compounds of gutta percha or India rubber with caoutchoucine they could obtain a substance harder than ivory which could be filed or wrought with tools and was capable of receiving a high polish.

In the next year Stephen Moulton made hard goods by a high heat and the use of variable quantities of calcined magnesia, adding thereafter the hyposulphate and sulphuret of lead, either or both. There was nothing remarkable, however, about the results obtained by Moulton.

These were, it seems, the only attempts to reach a result like hard rubber, and the inventors down to that time had looked upon what had been done the matter in the light of a discovery which might or might not be useful. The discovery of the process of vulcanization had been enough to set two continents agog, an event considered of importance sufficient to be embodied by our own government in the official documents of the time.

Goodyear in 1851 seemed to comprehend the importance of such a substance and boldly launched his invention, claiming for it that his process was for the production of a composition applicable to the manufacture of buttons, knives, and razor handles, inkstands, door-knobs and articles where hardness, strength and durability are required. It seems that he started in to make an intricate compound containing magnesia, lime, French chalk, shellac, resin, salts of lead or zinc, in fact the list seemed to comprise each and everything that could be possibly thought of. These compounds were mixed in a masticator, rolled into sheets and then manufactured into the desired articles. The compounds after vulcanization were hard like shell, horn, bone or jet. The heat required was about 300 degrees Fahrenheit, and the time of exposure six hours. Mr. Goodyear was not satisfied with the complexity of his compound and discarded all ingredients save the sulphur, but emphatically claimed that nothing could be practical unless four ounces of sulphur to the pound of rubber were used. His process was applicable to gutta percha or caoutchouc, or a combination of both.

In his subsequent discoveries he formed a product of coal tar and caoutchouc, and in 1852 he brought out a comb patent. In this was the ordinary simple compound of sulphur and caoutchouc.

The substance when made was improved by rolling the sheet at a temperature of 300 Fahrenheit, the comb being cut out before or after this rolling process at will. The tortoise-shell appearance and ivory like texture was made by gradually raising the temperature and retaining it for a certain length of time.

Goodyear, it seemed, gradually increased the proportion of sulphur, and in 1852 we find him using 50 per cent. His favorite maximum heat was about 300 degrees, bringing it up from 230 in the space of four hours. The difficulty then experienced was in obtaining a good mould to hold the plastic substance during vulcanization. A great many substances were tried, even gutta percha itself did its duty, and afterward sand and glass were tried. Finally in 1854 the tinfoil process came to the front, which is in use at the present time. This holds the article firmly during vulcanization, and can be readily removed from the article when finished. It was one of the turning points in the hard rubber manufacture and trade.

Home Made Rubber Cement.

A RECIPE for rubber cement making, for household use that has been going the rounds of the country papers for some time past is: "Pure virgin rubber, a piece the size of a walnut, cut up as fine as yarn, the finer the better, put in a pint or twenty ounce bottle; add one pint of benzine free from oil. Let it stand a few days, shaking occasionally and it will become thick as molasses. Thin with benzine when about to use it. For mending rubber boots or shoes use as thick as possible, first toughening the spot to be patched, and also heat it with a warm piece of soapstone or iron."

FULLY 500 of the operatives of the Woonsocket Rubber Company and Lawrence Felting Company attended the excursion to Rocky Point. It required ten cars to accommodate the crowd.

Asbestos and Its Uses.

FROM time to time, we are in receipt of communications from abroad asking whether it is practicable to establish a trade in asbestos goods if imported into this country. It can hardly be stated, off hand, exactly what could be done in such a matter, as a test might upset all previous views. The principal difficulty in the way is the new tariff bill, which designedly places on such goods a high tariff of not less than 35 per cent., and it might be construed to be more. Suffice it to say that, as we are credibly informed, all importations have been stopped. Some manufacturers hazard the opinion that a low grade of goods would be entered here and sold at a profit, but we have not learned yet of any such attempt. If the high grades could be brought in, then the people that set up the tariff provisions have failed to carry out their plans. Well-informed people are inclined to think there is a profit of 100 per cent. on some articles. If this be so the tariff would hardly protect. A fact of importance is that in this country all the companies have formed a combination with a paid capital of $1,250,000, which would make it dubious to any ordinary importer whether he could hold out competition with the domestic company. It is only fair to say that the domestic company, for the supposed purpose of keeping out competition and also to increase the demand has commenced to reduce its prices to the public. Crude asbesto- pays no duties in this country, and the greater portion of the product is obtained from Canada. It is, however, found in almost every State in the Union.

A Life Saving Skirt.

FROM a German trade journal we learn that a very timid American lady, who was recently obliged to risk her precious person on an ocean voyage, invented a very simple and safe arrangement to keep herself afloat in case of necessity. She wore a skirt trimmed all around with hollow rubber, terminating in a thin tube with a mouthpiece on the upper part of the corset. In case of the vessel suddenly sinking, it would only be necessary for the inventress to fill the hollow rubber with air by blowing into it, and this would necessarily keep her afloat until rescued.

Notes of Manaos.

THE people of Manaos confidently look forward to the time in the near future when their city will outstrip Pará. It is a great distributing point for that vast section of country; the people are locally patriotic and progressive. Export duties are now so levied as to give in its favor three per cent. for direct foreign shipments. The harbor is a grand one, 120 feet of water being had when the river is high. Soon after the middle of June the river falls almost at once 40 to 45 feet. The change is so rapid as to be classed as a phenomenon of that remarkable river. There are no warehouses, and but one wharf is completed, while lighters are commonly used for loading and unloading.

Several large houses are located in the city and represent much wealth, but among the local population $20,000 is considered a fortune. People spend money freely, take large risks and do not accumulate property rapidly. Amusements are few; the Saturday evening party or an occasional dance with a little shopping during the week, forming the sum total of social pleasures.

All the whites dress in black, an unsuitable style for the climate, but the negroes, having monopolized white clothing, it is not considered in good form to follow them. The higher class affects diamonds, but cheap, flashy jewelry is the rule. Take a handsome gold watch there and it could not be sold, while a score of the galvanized article would go as fast as the latest nostrum on the street corner in a city in the United States. All clothing is imported, and the stores are of good appearance and fairly stocked. Sewing machines of the Singer pattern are plentiful, but as there is no agency there, orders pass through the local storekeeper. Carriages are abundantly used, the mule being driven exclusively. The two-wheel cart with donkey is used for the drayage. The Portuguese are the laborers; barefooted, scantily dressed, and prudent in his habits, he outranks his brother European in rapidity of acclimatization, that great difficulty to be overcome by emigrants. Still, the mortality is not so large as one would be led to believe from the reports that have come from that country. For days in that city of 15,000 inhabitants there will not be a single death, although in the rainy season four and five are not uncommon.

Gasoline is used for lighting; the electric light has not reached the place. There is a good system of water-works. Sewers are now being discussed. There is plenty of back country, but it is a sealed book. With the exception of a road built out about ten miles to a small colony from Ceará, very few people have penetrated over five miles from the banks of the river, a fact substantially true of the banks of the whole course of the Amazon and its tributaries. The river is the only highway, and in the existing state of the civilization of the country must remain so. There is no incentive save that of curiosity for exploration. Not but that the interior is rich beyond calculation, but the banks are rich enough for all practical purposes. The vulture is the scavenger of Manaos as it is in Pará; but wild animals and venomous snakes are seldom seen. There are fair government schools and some very good churches, the cathedral being a structure of prominence. There are great opportunities in the surrounding country, and at the rate at which the city is growing will some day attract powerful syndicates with capital to bring out on a gigantic scale products of the near-by country.

Borax Solution of Rubber.

INDIA rubber not only may be kept emulsified by a borax solution, but actually may be dissolved in the same from the raw solid gum. If simply an emulsion be desired, a solution of the rubber in benzine or other hydro-carbon, to which a small portion of alcohol has been added, is mixed by vigorous agitation with a two-fifths saturated solution of borax, previously heated to from 120 to 140° Fahr., the agitation being continued until the mixture has cooled down to the temperature of the air or nearly so. It is found that not more than about 3.5 to 4.5 per cent. of rubber should be present in the fluid when finished, as any higher strength, if attempted, quickly separates, and in such cases sometimes the entire quantity coagulates when the separation begins. It would also seem, as an important fact, that the Ceara or Madagascar rubbers have proved the best for use with borax solutions, possessing advantages in this respect even over the Pará.

Dr. B. W. Richardson has found that gutta percha, softened in hot water, or in hot water and glycerine, may be made to absorb almost any desired styptic and antiseptic substances. The mass can then be drawn out or moulded into any required shape, and as a surgical dressing will serve the purpose both of adhesive plaster and splint.

THE Derby Comb Company, of Hartford, Conn., has filed articles of organization. It has a capital of $5000.

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An Advertising Scheme.

OUR scheme, original as to its magnitude and future constant use, is to render all advertisements, big or little, serious or silly, high-toned or ordinary, in poetry.

Now, when you've had time to breathe, we'll give a few samples and expatiate on the benefits and blessings it will bring to humanity in general and to poets (?) in particular.

For instance, the following poetical ad. would fill a home with servants before breakfast and keep them till supper time, at least.

Wanted ! A Kitchen Lady who
Can cook, eat, wash and iron, too.
And let her mistress, when about,
Have every other Sunday out;
She needn't pay for what she breaks
If she won't think that eels are snakes;
To entertain her "cousins" she
Can play the grand piano free;
The work is small, the wages high;
No college graduate need apply.

Here's a model for landlords:

A house to let where you will get
Home comforts in perfection;
To boarders tall or children small
There isn't an objection;
The rent is low and will not grow
In case you stay forever,
And landlord will pay any bill
You send him—he's so clever.

Here's an ad. for a hash-mill:

We want a few boarders for company only;
Our house is so big that we're awfully lonely;
We set a fine table with wine sauce and punches,
And never use yesterday's scrapings for lunches,
We practice no fraud with spring chicken or hash;
The landlady smiles—tho' you haven't the cash.
Each room is a front and a sunny one, too;
No bugs in the beds and the carpets are new.

This one will bring back a runaway wife:

Whereas, my wife, Eliza Jane, has left my bed and board
For which I'm glad—although my heart is breaking.
And I forbid all persons to her trust or keep or board,
For I won't pay a single debt she's making.
If she'll return before I die a widower bereft
I'll promise to do anything she wishes,
For I'm tired tending of the baby she has left,
And washing all the dirty dinner dishes.

Here's a "Personal" in cipher:

Johnnie Jumper certain sown
Fruit for foolish bingo bone.

We do not understand it:

One for a bank:

Alliance Trust and Savings Bank,
One Million Surplus Paid In.
Financial standing—Highest rank—
Just the Place to Trade In.
We keep our Cashier in a Cage;
Our President is Pious;
Depositors of any Age
May walk right in and try us.
Fifteen per cent. we guarantee
As long as we are trusted,
And when this ad. you fail to see
You'll know the Bank is Busted.

We might go on forever with samples of our patent poetical ads., but we have given enough to show the grandeur of this revolution we propose to start.

While this will be of untold benefit to advertisers—insuring them a grand success every time—the public at large will likewise share in its blessings, for they may fill their souls with poetry divine at a merely nominal price—say one or two cents—on their way to and from business, or while at lunch, or in the mornings at the home table.—*H. C. Dodge, in Journalist.*

Recent Rubber Patents.

No. 452,479.—Method of manufacturing articles of combined hard rubber and metal; Frank Lambert, Brooklyn, N. Y. A method of manufacturing articles of hard rubber and metal, consisting in vulcanizing the rubber portion, then subjecting the article to the action of heat, then cooling the same, and finishing the rubber portion.

No. 452,488.—Hard rubber disc for oscillating disc actions; John Thompson. Brooklyn, N. Y. A disc for oscillating disc actions, composed of hard rubber, and an interposed metal plate, the plate being perforated for the purpose of uniting the sheets of rubber to each other and to the plate.

No. 452,499.—Pencil tip; Oscar Mussinan, Jr., N. Y. The combined pencil tip and removable point protector formed of a paper tube having a plug of rubber glued to one end, and a disc of paper secured to the rubber.

No. 452,643.—Bottle pump; Louis Heitmann, Miamisburg, O. A bottle filling and emptying apparatus, consisting of a chambered base, having at its upper end a cup shaped flange and screw threaded pocket; and at its lower end a pendent tubular neck entering the bottle mouth, an elastic sphere seating in the cup shaped flange, and provided in its upper portion with a valveless air orifice; the flanged, screwed-threaded nipple attaching the bulb to the screw-threaded socket of the base pump, and the angular filling and emptying spout fitted air-tight in the side of the base pump, attached to and having a valveless pendent branch pipe, whereby a bottle may be filled and emptied.

No. 452,760—Composition of matter for insulating purposes; Frederick Salathé, Jersey City, N. J., assignor to the Litho-Carbon Co., New York. A composition consisting of a hydro-carbon product, sulphur and India rubber, gutta percha or oxydized linseed oil, the whole united and combined.

No. 452,762.—Impervious tissue; Frederick Salathé, Jersey City, assignor to the Litho-Carbon Co., New York. A waterproof tissue composed of a hydrocarbon product combined with India rubber or one or more of its main eqivalents.

No. 452,765.—Composition of matter for insulating purposes; Frederick Salathé, Jersey City, assignor to the Litho-Carbon Co., New York. A composition for insulating purposes, consisting of gutta percha, gum shellac, and a new hydro-carbon product.

No. 452,851.—Overshoe fastening; Herbert S. Tollman, Meriden, Conn. In a loop or catch plate for overshoes, the combination with a turning or lever of usual construction, of a take-up plate formed in a blank of substantially rectangular shape, and consisting of a raised central longitudinal portion, two lateral flanges and two upright portions connecting the raised portions and the flanges, the raised portion being provided with a series of alternate transverse slots and cross bars.

No. 452,869.—Artificial ivory; George W. Tooker, New York. Combination of material made from albumen, bone ash powder, talc, and fibrous material.

No. 452,876.—Tire for vehicle wheels; Christian H. Gray, Silvertown, Eng. An air cushioned tire with a lining or partial lining of viscous or plastic rubber, which will provide for the closing up of holes made in the air cell of the tire.

No. 452,890.—Pencil or crayon; Enoch W. Perry, Jr., New

York. A pencil or crayon consisting of a body material, a pyroxiline compound, an oil, and a coloring agent.

No. 453,034.—Toy; Edward F. Blythe, Philadelphia, Pa. A toy figure having a compressible elastic body possessing an inherent tendency to expand when relieved from pressure and levers hung from said body, the projecting arms of said levers aiding to form the limbs of the figure.

No. 454,835.—Process of making Artificial Leather; Alfred E. Arnold, Marrickville, New South Wales. In the manufacture of artificial leather, the process, which consists in impregnating leather reduced to a more or less fibrous condition with a binding solution, combining therewith while moist, leather reduced to a more or less granular condition, also impregnated with a binding solution, and in a dry state, and subjecting the compound to pressure.

No. 454,874.—Inkstand; William E. Lewis, Corry, Pa. An inkwell having its top sloping toward the centre and having a central opening therein, a tube depending from said opening into the well, and of a corresponding diameter throughout, and a hollow rubber ball of a diameter to fit closely in said tube, which ball is allowed to move within the tube, and by its buoyancy close the same when the pen has been removed from the ball in use.

No. 454,938.—Method of Laying Electric Conduits; Alexander C. Chenoweth, New York, N. Y. The method herein described of forming continuous conduits, consisting in the preparation of a centring of the required shape and size, by spirally winding a properly-shaped core with the material out of which said centring is constructed, withdrawing the core, then sustaining in position without its core, surrounding the centring with material out of which the conduit is to be constructed, while said material is in a plastic condition, and after the latter has hardened or set finally withdrawing said centring.

No. 455,286.—Process of Making Waterproof Compositions from Linseed Oil; Henry Kellogg, New Haven, Conn. The herein-described improvement in the method of treating linseed oil for waterproofing purposes, which consists in, first, boiling the linseed oil in a nitric acid bath until it reaches a gum-like condition; second, subjecting the gum to a bath for the removal of the acid; third, cutting the gum in a solvent bath; fourth, disintegrating said gum with the solvent; fifth, grinding the disintegrated mass; sixth, boiling the thus-ground material; and, seventh, subjecting the same to another boiling, adding to the mass a drier during this last boiling operation.

No. 455,371.—Syringe; Frank T. Van Woert, Brooklyn, N. Y. In a syringe, the combination, with the elastic bulb and with its nozzle, of a valve for closing the nozzle, a spout extending from the nozzle between the valve seat and the bulb, a rod extending from the valve into the bulb, and means for retaining the valve-rod in contact with the bulb.

No. 455,392.—Syringe Shut-off; William J. Ellis, Akron, Ohio, assignor to the B. F. Goodrich Company, same place. A syringe cut-off, consisting of a strip of spring metal having an opening near its centre to receive the tube-tip, bent from said opening to form springs, the ends of the springs bent toward, and arranged to closely pass each other, and provided with openings to receive the syringe-tube, the end of one spring bent inward at the end of the opening to engage and form a latch for the other, and the other having the metal bent inward at the opposite end of the opening to register with the catch when the strip is released and compress the tube.

No. 455,402.—Siphon-Syringe; Albert T. Holt, Akron, Ohio, assignor to the B. F. Goodrich Company, same place. In a siphon-syringe, the combination, with the siphon-tube and the discharge-pipe, of a hollow saucer-shaped elastic diaphragm susceptible of lateral distension to create a vacuum in the tube, having central openings connected, respectively, with the tube and pipe and provided with an outwardly opening valve in the opening of the discharge side,

No. 455,667.—Life-Preserver; Carl A. L. Köpcke, Rotterdam, Netherlands. The combination, with a vessel, of a reel thereon, a cable on said reel, a hollow air-tight ball of collapsible material provided with exterior metal loop-handles, to one of which the end of said cable is secured, the inflating tube, the bridge-piece protecting such tube, the air-outlet composed of a metal ring secured in an aperture in the ball, and the threaded cap for such aperture having a handle, for the purpose set forth.

No. 455,769.—Pendent Handle; Friend W. Smith, Bridgeport, Conn. A pendent handle comprising a spherical rubber body having a perforation therethrough, and a single spindle extending clear through said perforation and projecting at the ends thereof; one end of said spindle having an eye for attachment to any suitable object, while the other end is shouldered to retain the rubber body.

No. 455,789.—Process of Manufacturing Insulated Conductors; Charles Cuttriss, New York, N. Y. The method of insulating electric conductors, which consists in forming a sheathing around a conductor by compacting or felting loose fibres of a material such as cotton applied to the conductor, and immersing the same while the sheathing is moist in a hot fusible insulating material.

No. 455,877.—Machine for Coloring, Printing or Ornamenting India Rubber Balls; Gustav L. Hille, George A. Audsley and Maurice A. Audsley, London, England. Patented in England, France, Germany, Belgium, Austria, Hungary, and in Spain. The combination, in a machine for painting or ornamenting balls of a rotary painting or ornamenting form, presenting circumferential painting-surfaces in a series of lines, a box having compartments separated by partitions for containing painting or coloring material, and projecting plates attached to said partitions and entering the spaces between the lines of said surface to prevent the admixture of paints from said compartments.

No. 455,904.—Insulating Electrical Conductor; Edwin D. McCracken, Alpine, N. J., assignor to the Norwich Insulated Wire Company, New York, N. Y. An electrical conductor having tape wound thereon in an open spiral, said tape being formed of twisted paper or paper cord flattened.

No, 455,939.—Syringe; Charles B. Dickinson, Brooklyn, N. Y. A conduit for syringes, atomizers, etc., comprising a continuous tube of soft India rubber expanded laterally at a point between its ends to form opposing diaphragms united at the outer edges, and opening into the tube, the adjacent surfaces of the diaphragms being parallel with each other and in a normal state in contact, while the continuity of the tube past the diaphragms remains intact.

No. 456,028.—Pneumatic Tire; William R. Foster, London, England. In a pneumatic tire, the combination, with the herein described valve nozzle, of a circumferential re-enforcing or constricting elastic band.

No. 456,058.—Weather-Strip; George Poe and Charles Angus,

Albany, N. Y., assignors of one-half to Joseph R. Nangle and Marcus S. Simmons, both of same place. A weather-strip, composed of a strip of fabric and a flexible backing molded thereon, the fabric being seated in a recess of the backing and extending beyond the edge thereof. The composition for the same composed of borax, wax, gums and a requisite quantity of benzol.

No. 456,120.—Insulated Electric Conductor; Edwin D. McCracken, Alpine, N. J. The combination of a conductor of insulating cords arranged parallel, or substantially so, and in contact therewith, but separated from each other, and an exterior insulating material that holds the cords in place.

Rubber Substitute.

THE term Rubber Substitute, in a manufacturing and commercial sense is often misleading. In soft rubber its use is so small a proportion of the whole that, the term addition would be strictly true.

In the hard rubber line there are many substitutes which have little or no rubber in them, and which are composed of various compounds and placed upon the market by persons totally unconnected with the legitimate trade. In soft rubber, however, nearly every broker has his line of substitutes, which he carries along with his Parás, Centrals and Africans. The substitute, if properly made, is not considered deleterious, and is very largely used. In clothing it is considered an improvement in the finish, making the goods soft and pleasant to the touch.

Its use is larger abroad than in this country, the skill in using it having received more attention in Europe than here; and, in this way, poorer grades of rubber can be worked up across the water than is yet practicable here.

The number of mills making substitutes is computed to be twenty-six, of which there are six in this country. The compounds have for their ingredients principally oil and chloride of sulphur.

The oil, is as a rule, either rape seed or linseed, preference being given to the former. There are other sorts composed of gun cotton and devulcanized rubber; of devulcanized rubber and rape seed oil, and of resin and oil treated with chloride of sulphur. The difficulty in all these compounds is, at the proper time in manufacture, to free the compound of the sulphur in a way so as to not make it deleterious to the goods to be treated. In America ammonia is often used to neutralize the acid, which the foreigner claims to be an injury.

One difficulty in the use of a substitute is that the quality is not capable of a test until it is incorporated in the goods and goes into the consumer's hands.

The customer tests it, and, of course, does not know what is the matter. The goods are simply poor, and he changes his place of dealing, just as he may be particular or indifferent in the expenditure of his money. Place a half dozen white substitutes in the powder on a large sheet of paper. Take them separately without reference one to another, and a soft mealy touch is the characteristic of each. If they were not side by side you could perceive no difference. But compare one with the other, and in the best grade there is a delicate feathery touch, almost indescribable but very perceptible, which marks it from its fellows.

Keep them in jars for a length of time, and the poorer grades will get sodden and rot.

THE Calumet Rubber Co., Chicago, is to manufacture and deal in rubber goods; capital stock, $12,000; incorporators, William T. Rawlings, Joseph M. Rubenstein and Casy H. Bacon.

Working up in a Rubber Factory.

BY A FORMER SUPERINTENDENT.

ABOUT this time a curious adventure came in my way, and one that I have often wondered about, without being able satisfactorily to reach definite conclusions as to the accuracy of my impressions. In the little town in which I was situated, and where I soon became well known, I met many gentlemen who were interested in the processes of rubber manufacture, and were more than willing to get points. As we made it a rule that no strangers could be admitted to the factory, these gentlemen, usually, after a vain attempt to get beyond the gate, would look me up at my boarding-place, and ask a variety of questions, without themselves being willing to give any inkling as to what they were driving at. The man of them all whom I remember the most distinctly was a powerful fellow fully six feet in height, with a profusion of blond hair and light whiskers, who from the first was very friendly with me, seemed to have plenty of money and an insatiable desire to get at the minutiæ of rubber manufacture. Whether he was German, Russian, or Englishman, I could not determine; there seemed to be few Continental languages that he could not speak like a native, and he had a faculty for answering questions in a manner that conveyed no information, which is saying a good deal when one realizes the acuteness of ordinary Yankee questioning. Time after time I met him as he idled away his days in our little town, and it seemed to me indeed as if he made it a point to run across me wherever I was and to strive to get better acquainted. About this time my roving disposition began to assert itself; and although I had not mentioned the fact to my employer, I was yearning to have a change of scene. I dropped a hint of this to my acquaintance one day, and could not but notice that it appeared to interest and please him amazingly.

"Why not go back to America?" he said, quietly.

"It costs money," was my instant reply, "and I have no surplus to spend while I am hunting up a situation."

"I think I could secure you a place in a large mill over there," he said, slowly.

"At what kind of work?" I asked.

"Either mechanical goods or boots and shoes," was his reply.

I wondered at the time how it was that he, who professed to know nothing about the rubber business or at least to have no pecuniary interest in it, could have such influence, and I was not slow to express my surprise at his words.

"I have a great many friends in America," was his answer to this, accompanied by a peculiar smile. After a moment's hesitation I turned to him and said:

"You certainly have some deep interest in the rubber business; and I believe you think that I could be of use to you; now why not tell me exactly what your plan is? If it is anything that I can fall in with, and something in which there is money for me, I am with you; if not, I will guarantee to keep your secret, whatever it is."

After some hesitation and the keenest sort of looks, as if

attempting to pierce me through and through to see if there was any deception in my offer, he finally said :

"What I tell you now must be in the strictest confidence ; and must never be divulged to a rubber man, or indeed to any one for at least ten years. I am here in this country as the agent of a great syndicate; one that is backed by a strong government ; this syndicate is about to erect one of the largest rubber plants in the world. It will be the only one in the country that supports it, will be in fact a monopoly ; and must be a financial success from the start. All the goods used there to-day are manufactured by foreigners. It is the design of this syndicate to take the whole of that trade, and to place their own prices upon the goods. We shall manufacture clothing, boots and shoes, and mechanical goods. When we are ripe for it we shall add to that sundries, mold work, and dental rubber ; in fact, it will be a fully fitted plant for the manufacture of anything that the country can use in the way of rubber goods."

"And you want to take advantage of my knowledge?" I asked.

"Yes, and no," he replied ; "we want you ; but we want to use you rather as a sponge for absorbing more knowledge, than to squeeze the knowledge that you now have out of you."

"What is your proposition?" I asked, interested in spite of myself.

"It is just this," he said ; "we wish you to throw up your position here at once, and start for the United States. On the day that you sail you will be handed £1000, and will have liberty to draw upon me for any necessary expense money. You will receive a salary of £2 a day while you continue in our employ ; which may be for your lifetime, if you so desire it."

"And what will my duties be in America?" I inquired.

"You will first go to a certain large rubber shoe factory," mentioning a prominent mill, "and with a letter of introduction that I can secure for you, will apply for work. Once in that factory, it will be your duty to make yourself necessary to them, as you well understand how. It is our wish that you should work for them faithfully, and earn all that they see fit to give you."

"And how shall I earn the salary that you are to pay me?" I inquired.

"In this way ; every week you shall send to us some information as to the processes used in that factory. We want to know in the first place what rubber they use ; what adulterants are used in the rubber ; the proportion of sulphur ; the heats ; the various processes that the boots and shoes go through as they are manufactured. We wish to know their formula for varnishes ; the prices paid their help for the making up of the goods, and the amount that each of the workers can do. We wish sketches of their machinery, and names of the manufacturers of it ; in a word, we want the whole of their business laid before us as far as may be done When you have done this to our satisfaction, we will have the influence to place you in a large mechanical goods factory, and there you will carry out the same general plan."

Without giving any definite answer to this astounding proposition, I sat and thought a number of moments, the stranger's eyes being fixed on me the whole time. Perhaps, looking at this in a strictly commercial sense, I was foolish in not accepting a position that meant so much to me ; but after my reflections were finished, I turned to him and said :

"In other words, I am to be a paid spy in factories that are owned and have been built up by the energy and toil of my fellow countrymen?"

"That is rather a harsh term to apply to it," he said with his bland smile.

"Still that is about what you want," said I ; "you wish me to go home and steal all the processes I can, deceive those for whom I work, and receive a good round sum for this deception and thievery?"

"Then you refuse?" said he, a scowl upon his face.

"Indeed I do," I replied with some heat ; "I haven't a great deal of money, but I'm no thief, and I never was a spy. You foreigners sneer at the Americans as men who are beneath you, and who never can be your social equals ; but you'll have to hire a foreigner, all the same, to do this dirty work. Indeed, no honest American would ever have made me the offer that you have seen fit to make."

"Very well, I have your word that this shall remain a secret ; and let me tell you, you're a foolish young man ; and you are perhaps incurring the ill-will of those who might be powerful friends to you ; and, if powerful friends, just as powerful enemies."

"Whether that is a bluff or a threat makes little difference to me," I said ; "I'm glad I have drawn you out and found your wishes ; for now I shall be troubled by you no more ; and if I find you hanging round the mill of which I am now superintendent, I shall see to it that you are thrown out in a hurry ; so you see I can threaten as well as you." With that he rose and went off in great dudgeon, and I went home and to bed satisfied that whether I made money or not, I wouldn't be a spy or a sneak thief, even for the most powerful syndicate in Europe.

He Wore a Life Preserver.

A TALL, well-dressed man stepped out of the ladies' cabin of a Jersey City ferryboat one morning recently, and addressing the crowd which stood about on the front of the boat said : "Gentlemen, good-bye." As he finished his brief speech he started on a run through the middle of the boat, towards the stern, dodging the various vehicles and horses.

"Stop him!" yelled half a dozen people, and an active deck hand seized him before he reached the after-deck. When he found himself liable to arrest he explained that he was agent for a patent bathing suit with a rubber life preserver attached and confessed that he had hoped to create a scene and a rescue, all of which would advertise his firm's goods.

He showed that he had an air bag under his clothes and was permitted to go his way when the boat reached New York.

"DOING business without advertising is like winking in the dark. No one knows what you are doing except yourself."—*A prominent advertiser.*

He Also Sold Fire Hose.

TWO men who were travelling over the Michigan Central Road the other day had struck up an acquaintance, and after talking for some time on general matters, their conversation took on a semi-confidential tone not infrequently adopted by business men under like circumstances.

"I feel mighty good to-day," said one of them, slapping himself on the legs, "mighty good. I've just about completed a very neat little bit of business. I'm in the fire hose line, and I don't believe there's a business in the world like it for competition, red hot all the time. Well, I learned by sheer accident last week that this town we're coming to was going to buy a lot of hose. I slipped up here very quietly, fixed one of the councilmen, and we've just prevented the other boys from getting any information whatever. The council's going to decide on the matter to-night, and there ain't a fire hose man in the whole country that knows anything about it but me. I've got a regular walkover. I dunno, somehow when a feller has successfully worked a scheme like that it makes him feel *great*. Does me, anyway."

"Do you know what I do when I feel as you do now?" asked his companion, quietly.

"No."

"I recall as vividly as possible some occasion on which I've made a big fool of myself. We've all done that, you know, and it sort of prevents the swelled head to think of it at times. Kind of brings a man down to the proper level. Don't you think it's a good idea?"

"Maybe," said the other, "but I don't happen to recall such an occasion just this minute. Well, good-bye, I get off here. You go right through, I believe?"

"I intended to," was the reply, "but after the information you've just given me, I believe I'll stop off here too. I'm a manufacturer of fire hose myself."

And as they walked down the aisle the first speaker looked as though he *had* recalled an occasion just that minute, after all.—*Detroit Free Press.*

A Brick in the Boot.

NEVER carry a brick in your hat; better slip it in your rubber boot. It is said that to dry dampness from the inside of rubber boots, round the ends of a brick so that it fits into the foot of the boot and put it in the boot at night. It will absorb all the moisture so that the boot will be dry in the morning. The brick must be dry and warm when put in.

What Caused The Fire?

A DOUBLY tin-lined and hermetically sealed box containing rubber coats has been in the Atlantic Bonded Warehouse, San Francisco, Cal., for some time. Recently it was found to be quite hot, and day after day the heat became more intense until it was decided to investigate.

Finally a permit was got from the Collector to open the box. It was taken from the building and opened with an ax. As soon as the fresh air struck the contents flames leaped into the air for several feet and a cloud of smoke escaped. The rubber goods were mackintoshes containing some compound which caused spontaneous combustion.

Recovery of Rubber Clippings.

IT has long been the custom with rubber clothing factories to sell their unvulcanized clippings to certain parties who soak the cloth with naphtha and free it from the rubber and then sell a gum back to the manufacturer from whom they purchase the clippings. For this purpose they employ women and children, who do the work by hand. A process quite similar to this, and which is used for the recovery of India rubber from scraps, cardings, and all kinds of fabric, is thus described: The pieces of fabric are first sorted; those containing iron and steel thrown into one pile, those that may be easily stripped to another; and those where the adherence of the rubber will be most firm is still another. The pieces in which there is metal are put into a bath of a solution of salt of copper, sulphate or a nitrate, of a strength that may be varied according to the character of the compound, and the metal is thus dissolved, the copper being precipitated. When the metal is removed, the pieces of fabric in the second pile are added, and the whole is put into a bath of hot water containing a small proportion of liquid ammonia, which loosens the rubber from the cloth so that it is easily detached. The pieces in the third piles which adhere very strongly together are put into a bath of liquid ammonia diluted with water, yet stronger than the first solution, where they are left from 24 to 48 hours; after which time as a rule the rubber can be separated from the fabric. Another method of recovering rubber was recently described by an employé in a large rubber factory in the United States, who had formerly worked in several German factories. Speaking of recovering rubber, he inquired of the writer whether it was not all melted in this country. Upon expressing amazement that such a question should be asked by a practical rubber man, he asserted with all sincerity that the process of melting was used abroad, and gave us this description of it: Car springs or rubber in which there was no fabric were first heated in a steam bath; during this heating, the sulphur distills off, and after a time the rubber itself melts, and flows into the hot water, where it collects at the bottom of the vessel. It seems that the jets of steam prevent the rubber from burning or vulcanizing further, and help on the melting. Of course after the rubber is melted it is altogether different from what it was before vulcanization. It becomes a sticky, fluid mass of a dark color, which at ordinary temperature will remain of the consistency of coal tar. On exposure to the air, however, it dries in sheets that look like paint skins. It is of course thoroughly waterproof, but has entirely lost its elasticity. Our German friend stated that it was used as a lacquer for metal goods, and also to a certain extent as a waterproofing compound for cart covers.

THE recent attack on Pará by a band of Indians was led by an old man, aged 70. He inspired his followers with the belief that the country belonged to his race. Whether it does or not is a debatable proposition, but the repulse of the Indians settled the matter for the time. The native is readily swayed by personal influence. The Amazon country, sea captains now state, is now politically quiet.

Trade Notes.

THE Toronto Rubber Company of Canada opened their new factory at Port Dalhousie on August 1st, and will soon employ a hundred hands. Mr. T. McIlroy is the manager.

—The rubber factory at Setauket, Long Island, is again running after being shut down ten days to facilitate the annual inventory. Mr. J. W. Elberson states that he has plenty of orders ahead and will give employment to 300 hands at once. He complains of the scarcity of female help and says that he would gladly give steady employment to any girl who should apply to him in preference to hiring imported operators. "Girls earn from $7 to $9 a week," says Mr. Elberson, and although the mild winters have played havoc with the rubber shoe trade, he feels confident of orders for the full capacity of his factory and expects to turn out 5000 pairs of shoes per day soon.

—The Elastic Webb Co., of Bridgeport, Conn., has increased its capital stock from $100,000 to $125,000. The president of the company is Edward Sterling, and the directors are F. B. Hawley, Edward W. Marsh, Joseph Bidmead and Edward D. Friswell.

—Efforts are being made at Galesburg, Ill., to settle the trouble over the rubber factory, for which a $50,000 bonus was given. Operations have been at a standstill for a month, owing to a quarrel in the company.

—Notice has been filed in the office of the Conn. Secretary of State, certifying that the L. Candee & Co., of New Haven, Conn., has increased its capital stock from $300,000 to $600,000, all of which has been paid in.

—A conference was held recently by operatives lately employed by the Pará Rubber Shoe Co. at South Framingham, and as a result John F. Travis and James Burke, representing the idle operatives, sought an interview with William T. Hart of Boston, the new president of the corporation. President Hart received the gentlemen cordially and talked very candidly on the condition of the industry. The workmen were given to understand that the concern was not in a prosperous condition, having suffered heavy losses. The managers are endeavoring to dispose of the large stock of manufactured goods on hand, and hope to start again as soon as it is sufficiently reduced. Recent sales were quite satisfactory. If the factory starts under their management it will be to work on orders.

—The new rubber factory at Jonesboro, Ind., has most of its machinery set, and according to all accounts is well fitted out. The goods to be manufactured are all kinds of insulated wire, and later, belting, packing and hose.

—The firm of Parker, Sterns & Sutton, at 228 to 232 South Street, New York, and 495 and 497 Water Street, for the past five years, have been systematically robbed. Suspicion fell upon Edward Bradner, the watchman for the rubber firm. Close watch was kept upon him, and one night he was seen to throw rubber into the yard of 495 Water Street. Presently William Righby, a fireman at 495 Water Street, appeared and carried the goods into the house. The two men were then taken prisoners. They confessed that they had been robbing the house in that way for the past year. They also betrayed the receivers and the detectives are after them.

—The old rubber mill that was known as a "Jonah" to the trade and was situated at Rocky Hill, N. J., was recently burned to the ground. The factory was built more than forty years ago and has been a sinkhole for thousands of dollars. It is said that bad luck was sure to attend any one who attempted to do business at this place, and indeed it seemed to be so, for of the many who tried to make the rubber trade pay within its walls, not one succeeded.

—The Granby Rubber Co., of Granby, Que., after a brief shutdown for stock-taking and repairs, started up again on full-time the first of August. This factory, which is run by T. V. R. Brown, of Montreal, a former New Yorker, and is superintended by Henry Burr, a well-known New England rubber man, has been increased in size steadily for the past few years and has made a fine reputation across the line.

—The progressive newspapers that describe Vianna as a short, *dark* man are a bit mistaken. The Baron has a light complexion and auburn hair.

—The rubber men can feel in full sympathy with the Fall River papers, that are wailing because of the $67,000 spent by their committees not a dollar went for rubber blankets. One paper says very sensibly: "The blankets would be the means of saving considerable loss of property at small fires where the principal damage is done by water. There are hundreds of homes in which there is a piano or other musical instrument, not insured, to which a great deal of damage may be done by the surplus water poured upon a smoking chimney or a burning straw bed. A rubber blanket of sufficient size could readily be thrown over a piano or a sewing machine, and such furniture as would be ruined by water, when there is no danger that the fire would reach them."

—A new rubber factory is reported as started at Somerset, Ky. W. C. Owen, of that place, is its secretary. The concern will be known as the Somerset Rubber Co.

—The Franklin Rubber Co., of Franklin, Mass., after a ten days' shutdown for repairs and stock-taking, started up again the middle of last month.

—The Boston Gossamer Co. have added another building to their factory at Hyde Park, Mass., which will be used this fall in the making up of rubber garments.

—It is said that an English capitalist by the name of Trickett has leased the Zylonite Works at Adams, Mass.

—The works of the India Rubber Comb Co. at College Point, L. I., have shut down for repairs on machinery.

—It is freely gossiped through the rubber trade that Thomas A. Bell, the former secretary of the Star Rubber Co., has gone West to make a new start in business. Whether he remains in the rubber trade is as yet unknown and will depend on the developments of the next few weeks.

—A strike at the works of the Riverside Rubber Co. at Bellville, N. J., is reported. About eighteen men are involved in it, their grievance being that they demanded more pay and didn't get it.

—The Boston Rubber Shoe Co. closed their Edgeworth factory for ten days the early part of this month.

—The Works of the Woonsocket Rubber Co. shut down recently, and all hands went on an excursion to Rocky Point, one of the noted pleasure resorts on the Providence River.

—A certificate of the increase of capital of the Standard Rubber Company of New Jersey, was filed at the County Clerk's office recently. Thirty-six thousand dollars was added to the present amount, $15,000, so as to increase the entire capital stock to $51,000.

—Kuhnhardt & Co., brokers of India rubber at Beaver and Broad Streets, about a year ago stored a lot of rubber at a warehouse on South Street, the amount being 3100 lbs. In March of this year, when the goods were wanted for delivery, they were 1400 lbs. short, which meant a shrinkage of over $1200. After a little brisk detective work two young men were arrested, one of whom confessed. It seems they were both in the employ of Hopkins, Lane & Hubbard, with whom the rubber was stored, and that they stole a little at a time and sold it off as fast as taken.

—A fire in Pittsfield, Mass., destroyed a large stock of rubber boots and shoes. No doubt the sufferer, Thomas Murray, knows the best place to buy more of the same kind.

—The Goodridge Rubber Novelty Co. and the Pará Rubber Manufacturing Co., of New York, have sold their patents on gymnastic apparatus to Mr. Charles R. Leonard, who has opened an office at No. 501 East 116th Street.

—The former sales agent of the Seamless Rubber Co., Mr. Martin, has severed his connection with that firm and purchased an interest in the Ideal Rubber Co., of Brooklyn, N. Y.

—Mr. Quinlan, formerly of the firm of Quinlan and Washburne, of Lowell, Mass., will, after the middle of August, be employed at the factory of the Goodyear Gossamer Co., at Hudson, in the capacity of factory superintendent.

—The works of the Boston Gossamer Co. at Hyde Park, Mass., are shut down for the midsummer inventory and repairing. They will be running again by the middle of this month.

—Mr. Harry Knowles, the selling agent of J. H. Plummer & Co., who has been on the road almost as long as Mr. Ferguson of the India Rubber Glove Co., and is about as well known, is hard at work and making some very good sales.

—Willis Darling, of the Boston Woven Hose & Rubber Co., has gone to his cottage, which is situated on the border of one of the lakes in Northern Maine. Mr. Darling steals away twice a year to play havoc with the large salmon trout that, somehow, tumble over each other to nibble at the Boston man's hook.

—G. M. Ayres, of the Metropolitan Rubber Co., has returned from an extended vacation through Massachusetts, with a day or two at Newport.

—Mr. H. K. Barnes, not Mr. Barnes of New York, but the one of Boston, had on exhibition, the other day, in front of his store a handsome fire truck which was on its way to duty in a New Hampshire town. Mr. Barnes has disposed of a good quantity of fire hose this season, and now is about to make one of his periodical trips to the South.

—About as far East as you can get in the United States is Calais, Me., and the British flag in St. Stephens, N. B., directly across the river, alternately droops and waves in gentle compliment to our own Stars and Stripes. On the border line is a busy rubber man, Charles Deming, who makes a specialty of handling the goods of the Boston Belting Co. and does a fine business among the denizens of that country section.

—Frank Phelan, of the Metropolitan Rubber Co., has just returned from a successful business trip in the East.

—Daniel A. Hawkins, of the Insulated Wire Co., during a leave of absence, is making a couple of special business trips for the Metropolitan Rubber Co.

—The India Rubber Glove Co. are having some very good orders of all sorts from every direction. The factory at Naugatuck is running full handed, and there is every indication of a very busy season.

—P. L. Rider, of Worcester, Mass., has worked up an extensive rubber business in his city. As both a jobber and retailer he carries an extensive line, and has done particularly well in mackintoshes.

—Mr. A. D. Hawkins, of the Metropolitan Rubber Co., has just issued another one of his artistic advertising designs. This time, it is a neat little country scene in which a hose is throwing a graceful curved deluge over a spacious area of grassy lawn. The margin of the picture has illustrations of hose, pipe, nozzles and reels, the whole being artistically lettered. The picture is small, neat, and with enough white color in it to give it a look of cleanliness indicative of the good work that water and hose will do.

—Mr. William H. Brewer, formerly of the Monogram Rubber Co., of Brooklyn, N. Y., has accepted a position with the Seamless Rubber Co., of New Haven, Conn., and will spend a part of his time in travelling and the remainder at the factory office.

—James Baird, the United States Consular Agent at Manaos, and J. O. Kerbey, late United States Consul at Pará, were in New York last month on their way to Europe. Mr. Baird was in pursuit of health. He has now lived in Manaos a score of years, having married there, and has proven a valuable representative of this country.

—The Ideal Rubber Co. has removed its factory from No. 1, Adams Street, Brooklyn, to 631 Kent Avenue in the same city.

—The rainfall in India this season has been very deficient, owing to a tardiness in the bursting of the Monsoon. Assam was excepted, and the good crop, which ought, owing to the high price of silver and other possible factors, to bring good prices, will probably be marketed early.

—E. A. St. John, the New York agent of the Vendome Rubber Co., is introducing new garments called the Arcanum and Coventry Showerettes. The cloth is a new fabric, waterproof and odorless, in worsted effects. It is peculiar inasmuch as it contains not a particle of rubber. It is made in every color and is of light weight. The cloth itself is worth in New York from $1.25 to $2.50 per yard, 60 inches wide. Mr. St. John has returned from a trip throughout the country, and reports a very good business.

—William Sanford, the New York and Philadelphia agent of the Pará Rubber Co., states that the affairs of his company are improving rapidly. A very good business is now done here.

—Williams & Dewson, New York, are selling a large line of their air cushions in plaids and colors, at very moderate prices. The rapid strides made lately in these goods are remarkable, when one remembers that for ten years these articles were only produced in imitation of white linen. The same firm are meeting a large demand for their waterproof hats. Everybody now-a-days has a mackintosh, and the demand for waterproof overgaiters is becoming general. Now with a waterproof hat the suit becomes complete. Of course, no one wishes to wear the old style of thick hat that is used by a fireman or a fisherman, but he calls for something light and well ventilated; and should the rain disappear when one is down town he is not left with a headgear pronounced, and out of place. The present style of hat does no discredit even to a sunny day and is not uncomfortable. Williams & Dewson claim that they are the only manufacturers who use steam vulcanization in the making of hats, and have six steam dies for that purpose. These dies are heated by steam both at the top and bottom, the feed and exhaust being carried to each iron. It is claimed by them that the ordinary way of heating the iron by gas jets is imperfect, as in the latter plan the degree of heat cannot be controlled. Be that as it may, there is no doubt that the firm is a progressive one, and will be sure to give their customers all that two enterprising business men can devise.

—E. H. Paine, of the American Rubber Co., has returned from his fishing excursion, and G. B. McClellan of the same company has gone to Sea Girt, N. J., for a brief outing. G. B. Whitney, travelling agent of the same company, has returned from a successful business trip through Pennsylvania. Mr. Whitney is very much gratified at the demand for the Storm Queen slipper in Pittsburg and elsewhere.

—It is stated by a rubber man from Pará that, 45,000 people from Ceará went into the Amazon rubber districts last fall, and only one-half of them returned alive. This was in the lower Amazon country.

—A happy description of the goods made by the Hodgman Rubber Co. is to be found in a catalogue artistically printed and illustrated in colors, recently published by that company. The illustrations are full of information, from the shattered umbrella on the title page to the tail piece. The gentle sheep which furnish the wool, the rubber plant under the equatorial sun, the skillful tailor, the fine representation of men, women and children, all clad of course, in the Mackintosh, on the promenade, in the carriage, on horse-back and bicycle mounted; the accessories; the yachting and steamer outfits; are all carefully and boldly presented, and in such a way as to create a desire for each and every article in its pages. The reading matter is complete in its detail, and clearly and concisely written. The catalogue is well calculated to accomplish its prime object, the making of sales.

—A rubber apron for the ice man, made heavy with rubber on both sides, is a proper thing, of which the Atlas Rubber Co., has sold fifty this season.

—It is related in Manaos, that Vianna made one quick turn in rubber during this season, which netted him a profit of $50,000. Obtaining some advance information, he started his brother Joaquin and a friend to Manaos, where they began to purchase as fast as possible. Before the news could reach this city in the uncertain facilities prevailing at the time, they had fairly scooped the town to the amount indicated, and were on their way back to Pará.

—E. J. Beggs & Co., of New York, who represent the Nassau Sulphur Works, and who are one of the few manufacturers who pay special attention to the refining of sulphur for rubber men, say that they have a fine trade with that class of people. They are also considerable dealers in mechanical rubber goods.

—Mr. Wm. H. Salisbury, the well-known Chicago rubber man is at present summering in New England, where he has a beautiful place in Andover, Mass. A jovial friend of his informs us that his first boat-ride taken on the lake that is close to his country estate was attended with disaster. It seems Mr. S. had been so long deprived of aquatic pleasures by his stirring business life in the West, that he made an enthusiastic rush for the boat, and instead of stepping into it, stepped over it, effectually dampening his ardor and his new summer suit.

—The Gutta Percha and Rubber Co. secured one half of the contracts from the New York Fire Department, which included *all* the rubber hose. The other parties who obtained contracts were the Eureka people and Cornelius Calahan of Boston.

—Says the Omaha *Bee:* "It should not create great surprise to learn that the Northwestern Rubber Company stretched its credit $100,000 beyond its assets."

—The new directors of the Pará Rubber Shoe Co. represent a total capital of more than $40,000,000.

—"The Industrial Advance of Syracuse, New York," is the title of a comprehensive sketch of that bustling city with its advantages as a manufacturing point. The book of something like two hundred pages is illustrated, and, with its special value, is interesting in a general way. Among the business houses of which special mention is made, is that of Mr. Frank C. Howlett, who is one of the largest dealers in rubber goods in the United States. His wholesale and retail establishment occupies a part of the Kirk Block, one of the architectural ornaments of the city, and the stock that he carries covers the whole field.

—A motor that is being put into many factories, to do an infinite variety of work, is what is known as the Isbell Water Motor. By its use 92% of the power of the water is utilized. The Barney Ventilating Fan Co., 70 Pearl St., Boston, are the agents for the motor, which in itself is a warrant that it is a good article.

How to Dry Rubber Quickly.

WITH the price of rubber where it is to-day, every manufacturer wants his gum to dry as quickly as possible, for delay in this means, where one is buying from hand to mouth, a loss of money. In going into various drying-rooms in different mills, the visitor will often be struck by the fact that the air in the drying-room is full of moisture. When this is the case it is utterly impossible to dry the rubber rapidly; in fact, it is difficult to determine when it is fully dry. That there is a simple

solution to this difficulty no one can doubt; indeed, the illustration accompanying this article has in many cases led manufacturers to adopt the simplest and best solution. This is to put in a fan that will remove the air laden with moisture and will supply fresh, dry air. We are indebted to the Barney Ventilating Fan Co., of 70 Pearl Street, Boston, for this illustration, also for the information that they are making a special study of drying-rooms in rubber mills and are putting in their compound ventilating wheel for that purpose.

Rubber Armor for Vessels.

SINCE the discovery of vulcanization India rubber has been largely used, both in the army and in the navy. During the Civil War the rubber manufacturers made fortunes out of the rubber blankets, which were of incalculable benefit to the infantry. It is perhaps not as well known that a progressive General thought that thin rubber gun wads would also be of great advantage, and that while trying them, succeeded in bursting a number of cannon. Both in France and in England frequent experiments have been made to discover if vessels of war could not be sheathed in India rubber in such a manner that they would resist shot and shell to better advantage than when metal sheathed. The English trials of rubber clad vessels and targets have never been made public. Those undertaken by the French Government are better known. In one of these a torpedo boat was sheathed with many thicknesses of a fine quality of India rubber. Against this boat was directed a perfect rain of bullets. The bullets almost without exception penetrated the India rubber, going entirely through, and losing much of their force. The rubber pierced by the bullets closed up instantly and allowed no water to enter the hull. Where the missiles were fired from a short range, the steel plates inside of the rubber coating showed ragged holes; but where the range was placed at a long distance, the plates were hardly harmed. But that there were other disadvantages is probable, for the rubber coating has never been adopted by either of the governments who experimented with it.

A Few Notes on Gutta Percha.

THE question of vulcanizing gutta percha often comes up; or more accurately was often agitated when gutta was more plenty. A number of different processes have been elaborated; perhaps the simplest of which is the following: a concentrated solution of carbon bisulphide is used, in which is put a solution of chloride of sulphur. In proportion as this latter is added, the greater will be the hardness of the vulcanized gutta. By using about 20% of the chloride, a body that has great similarity to hard rubber is secured, and one that is little affected by heat. Speaking of gutta percha a communication was received some time ago from an English gentleman, who wrote that he had sent a sample of an African gutta percha secured from natives who had tapped a tree that was utterly unknown to him. For some reason the sample never reached us, and we are anxiously awaiting further information on this interesting topic. It would be a great boon to the world if a new source of gutta percha could be discovered; for the trees in Borneo and the gutta regions are being rapidly destroyed, especially the *Dichopsis Gutta*. There are however other species which yield gums that are of inferior quality, which are frequently mixed by the native collectors with the more valuable red variety. It is said by a traveller who has recently passed through this country that the rough-stemmed trees which grow in the old jungle 150 feet high are becoming very rare. Indeed the younger trees, those even that have a diameter of less than a foot, are felled, and drained of their sap. This process of draining takes several days; the sap being collected in cocoanut shells from which receptacles it is transferred to a pot and boiled for thirty minutes in a little water. This boiling is simply to prevent the milk from hardening or oxidizing, which makes it valueless. A small tree under favorable conditions will yield about 130 pounds, while the largest will give three times that amount. This therefore makes quite an amount for the gum collector, who is perfectly willing to kill the goose that lays the golden eggs to satisfy one day's needs. In Borneo the gutta is always collected by the Dyaks, who make up parties of 100 men each, and are gone several months to the forest to collect this product. Thousands of trees are destroyed yearly; and it can only be a short time now before the gutta industry in that part of the world will be a thing of the past. It has been discovered beyond a peradventure that gutta percha can be obtained by tapping trees just as easily as by cutting them down; although the quantity from each tree will be a trifle less. The trees can also be easily cultivated and grow with great rapidity, the juice being available for market in ten years after the seed is planted.

The Balata Gum Industry.

MR. G. S. JENMAN, English Government Botanist in British Guiana, has just completed a very exhaustive report upon Balata and the Balata industry of that region.

With regard to the character of the gum, Balata or "*chicle*" as it is also called, Mr. Jenman says its strength is very great, and since it does not stretch under tension, it is particularly well adapted for special appliances, such as machinery bands.

In a report on the Balata, Dr. Hugo Müller, F. R. S., says that it "can be used in almost all cases where gutta percha is employed." He states that although Balata is treated by many manufacturers simply as a kind of gutta percha, it is really distinctly different, especially in some of its physical characteristics; for instance, it is rather softer than gutta percha at ordinary temperatures, and not so rigid in the cold. In the effects produced by exposure to light and air, a very marked difference is observable between Balata and gutta percha. The latter becomes altered on the surface, and changed to a brittle resinous substance, into which the whole of the mass is converted in course of time; Balata, on the other hand, is but slowly acted upon under these circumstances. The electrical insulating properties of Balata are said to be quite equal to those of gutta percha.

The milk is collected by cutting two parallel incisions in the bark to a height of about eight feet; the lower extremities of these incisions are brought together near the base of the trunk, and at the apex of the angle thus made the bark is slightly lifted, and the rim of a calabash, into which the milk trickles, is inserted. The milk runs for from 40 to 60 minutes, and from a tree of 15 to 20 inches in diameter, about three pints of milk can be obtained if the yield be favorable.

The best collectors do not injure the trees, and always tap them on the opposite sides, leaving the intervening spaces for subsequent years. In careless collecting—the too general rule, we are told—every stroke of the cutlass penetrates the bark, ultimately causing the death of the tree, and it is too frequently the custom to fell the trees, tapping them by cutting parallel transverse lines at intervals of about a foot.

The milk is dried by pouring it into shallow wooden trays, previously rubbed with oil, soap, or grease, in order to prevent the gum sticking to the sides; it is then exposed to the air, and sometimes to the sun, in fine weather requiring two or three days to dry, and in wet weather a week or more. When sufficiently dry to be removed from the trays, the sheet is thrown over a line or bar to drip and harden.

A good deal of foreign matter is found in the milk, and Mr. Jenman states that adulteration is so systematically carried on that the agents, who buy the Balata in the milky state and have it dried themselves, must be constantly on their guard against the introduction of inferior admixtures.

It would appear that some action on the part of the Government is necessary to control and regulate the collecting of Balata, otherwise the time cannot be far distant when this tree will have disappeared as completely as has the Isonandra gutta from the Malay Archipelago.

THE Buckley factory at Norwalk, Conn., is running again.

Hamilton Rubber Co.'s Inventory.

HON. F. A. McGOWAN, receiver of the Hamilton Rubber Co., has filed the following inventory of its assets and liabilities:

ASSETS.

Real estate	$37,784.00
Machinery	14,903.36
Personal property	7,358.49
Engineer's supplies	195.55
Manufactured stock	2,523.10
Stock in process of manufacture	2,875.88
Raw material	4,852.91
Accounts receivable—considered good	23,640.68
" " doubtful	82,281.70
Goods in consignment	4,810.16
Bills receivable—good	2,810.16
" " doubtful	9,627.11
Cash in bank	1.99
Total	$194,296.18

LIABILITIES.

Real estate mortgages	$125,000.00
Chattel mortgages	57,000.00
Accounts payable	21,884.72
Bills payable under mortgage	52,000.00
" " not under mortgage	100,504.99

CONTINGENT LIABILITIES.

Bills receivable, discounted, bearing endorsements of the Hamilton Rubber Company	$12,815.99

The principal mortgage liabilities are divided as follows:

Mortgages of the State of New Jersey	$ 15,000.00
Mortgages to Anna W. Baird	100,000.00
Mortgage to Orilla M. Whitehead	7,500.00
Mortgage to Trenton Banking Co.	2,500.00
Chattel mortgage to Anna W. Baird	49,500.00
Chattel mortgage to Orilla M. Whitehead	7,500.00

In the accounts payable are included:

Edgar Whitehead	$ 6,715.47
Joseph Whitehead	11,228.06

The schedule of bills receivable which are marked doubtful contains notes to the amount of $9627.11, given by the Northwestern Rubber Co. Two notes amounting to $4000 are held by the First National Bank of Trenton as collateral security for note of Hamilton Rubber Co. to the order of Joseph Whitehead, for $4000.

Fossil Flour in Rubber Work.

SINCE the time of the invention of sulphur vulcanization, almost everything in the way of the cheaper metallic oxides, sulphides or earths have been tried as fillers for rubber. So careful has the experimentation been in these lines that any practical rubber man can tell exactly what results are attained by these different materials.

A curious earth that has not as yet received much attention from the rubber men, partly because the supply has not been regular, and partly because when it could be secured, it was found in connection with other substances that made it of little use, is what is known as "Fossil Flour." Quite recently a vast deposit of this has been discovered in the State of Maine, and that too of such purity as to arouse the wonder of the best analysts. In investigating the properties of this new earth, one is impressed at once by its wonderful faculty for resisting the action of acids, alkalies, oils, and especially by its remarkable quality as a non-conductor of heat. A simple test of this latter quality made by one interested in the company, was to take an inch cube of the material and place it on a bar of iron. The iron bar was then put in a blacksmith's forge, and heated until it was melted away from the cube of earth. So little did the heat penetrate this cube that one could easily place the fingers upon the upper part of it without inconvenience from the heat.

Exactly what value this non-conducting property might have in rubber is not, perhaps, at first apparent, until one reflects upon the clammy, repulsive feeling of ordinary rubber clothing, and indeed of rubber goods in general. To use a common illustration, we might cite the case of the old-fashioned oil-cloth, which has much that feeling, and which is being practically driven out of the market by the later invention of linoleum, the latter being entirely free from the inconvenience described. If rubber garments could be made of a compound of India rubber and a first-class non-conductor, there is no doubt but a surface much more agreeable to the touch would be produced; and that one objection to rubber clothing would be done away with.

It is not in clothing, however, that the strongest points of the new adulterant would be developed. For valve work it is said to be far ahead of anything made in rubber; valves made of it have been subjected to the severest tests, and are said to be almost indestructible.

Fossil Flour is almost as white as oxide of zinc. It is so light in weight that a flour-barrel of it in its natural condition will weigh not over 50 lbs. It is as we have already stated, absolutely unaffected or unchanged by any sort of mechanical manipulation, by acids, alkalies, or heat. As it is mined, it comes out of the ground a pure white powder, so fine that it cannot be ground any finer. A careful analysis of it shows about 95% pure silica.

In speaking of this as silica, one would perhaps at first get an idea of particles that have sharp edges, and a feeling similar to that of corundum or emery. That however is not true in this case; as the earth is what is known as a diatomaceous earth, made up of a vast number of infinitesimally small shells; each individual shell having been the home of a diatom, built for it from silica, held in suspension in water.

This kind of earth has been used in Europe very largely for a variety of purposes; one of the most curious of which was in Sweden, where the poorer classes mined it and mixed it with wheat-flour, in order to make bulky loaves of bread, not for sale, but for their own eating. In belting, packing, hose and boots and shoes, this adulterant has many advantages, which no doubt the rubber trade will readily discover.

IN the curing of rubber goods manufacturers invariably use a preparation to prevent the fabric from adhering to the moulds. There are various preparations for this purpose. Bayaud & Stevens of New Street, New York, report a large sale of their Asbestine pulp for this purpose, many of the leading manufacturers buying of them in preference to any other.

Water Bottles and Fountains.

BY S. M. J.

SO much has been said about white compounds and the methods of making up the goods into which they enter, that it may seem like a rehash of an old story to talk on this subject; but there are some few points that have not as yet been touched upon, which is my excuse for this article. Of course any fairly furnished rubber manufacturer knows how to make white rubber, or at least ought to; for, even while I say this, I recall the fact of a man well posted in black mixtures who had so been brought up in the belief that litharge must enter into every compound, that he put it into a white compound, and could not understand why after vulcanization it was not white. Without dwelling upon this, or giving any specific compounds for white goods, I am going briefly to give an idea of exactly how the goods are made up. The part of making up, perhaps, begins with the spreading of the stock. In this, however, if the calender and the calender man are all right, there should be no trouble in turning out exactly the thickness wanted and in having the texture all right for the best results. After the stock has been stripped from the apron upon which it is spread, the next thing is to give it the peculiarly ribbed appearance that many of the goods have. This, to be sure, is not a necessity, as many water bottles are made up plain. One method of producing this ribbing was to press the rubber after it had been cut up into small sheets between metal plates that acted as dies and gave a fine appearance. Another way is to have a grooving roll so arranged that it may be run against one of the calender rolls, and thus give this result. The stock after being thus ribbed is sent to the cutting room; and here the parts for the water bag are shaped. These parts consist of the bag shape proper, the neck, the binding, the rubber handle, and the tail piece. The bag, proper, is cut out by a die, two sheets of the stock being laid together with the ribbed sides out, and the cutting of the die through the two sheets of rubber in a measure catches them together, so that this is really a part of the making up. These large pieces are put in cloth books, and then sent to the tables where the making up takes place. This work is all done by girls; the bag maker's table is, as a rule, covered with zinc; has a hanging shelf above it and a shelf below it, also zinc covered, for receiving finished work. Each worker at a table is provided with a tin cement cup, with brush and cover, a stitcher, made after the fashion of the well-known tracing wheel, and a smooth iron hand roller for setting the seams after cementing. The first process in the manufacture after the different parts reach the bag maker, is that of cementing. In order that the cement may not touch the portions of the bag that are not to be covered with binding, a metal form is laid lightly over the bag, leaving the edge free, which is brushed lightly over with the best white rubber compound dissolved in naphtha that can be produced, as upon the integrity of the cement depends a great deal of the strength and durability of the water bottle. After the various parts have been cemented; that is, the various parts of the bag proper, the binding and the neck; the double bag piece is opened out at the mouth and slipped over a curved rod of half round iron, somewhat similar to a section of a wheel tire. The binding is then put over the edges of the bag pieces, holding them together, is rolled down by the roller, and then run over by the tracing wheel, which latter gives it a finish, and also helps to set the two portions of unvulcanized rubber more closely together. The neck piece is then formed separately, and after being cemented at its lower edge is placed around the metal bottle top, the thread of which has received a generous coating of cement. This is sometimes wound in with wire to keep it solid and to keep it from leaking, and sometimes it is not. A piece of binding is run around the neck of the bottle; the flexible rubber handle, which is made of friction cloth covered with rubber, is next cemented to the shoulders of the bag; the tail piece is cemented on, and, if it is a solid piece, is eyeletted. If the bag is a combination syringe and water bottle, an outlet pipe is put at the lower end of it, and the whole dusted over with French talc and laid upon the zinc covered shelf, out of the way of the workers. In finishing up the work of the bag, the next process is to carry it to the vulcanizing room, where it is laid in an immense sheet iron pan that is practically filled with a layer of French talc pressed down very smooth. A little of the talc is put inside of the body of the bag to keep it from sticking together; and then the whole is covered about three inches deep with another layer of talc. This forms in reality a mold for the water bottle; the whole design being to hold it in place after it is exposed to the heat, and until vulcanization is complete. A two or three hour heat is commonly given goods of this sort, after which they are taken out, the French talc is carefully blown out from the interior of the bottle, and the goods go to the packing room, where they are gotten ready for shipment.

Setting Seams with the Thumb-Nail.

THE vent on a beer faucet is an indispensable adjunct to its usefulness, and the method in which it is made is interesting, if not entirely novel. The vent, which is about nine inches in length, is made of rubber, which comes in sheets, and is put together in plies—four at the thick end and one at the thin end. After the plying has been done it is cut in strips, ⅛-inch wide, and turned over to a boy for completion. And here is where the utility of a good thumb-nail assumes one aspect of commercial value undreamt of by the masses. The strip of rubber demands careful handling at this stage of its transformation, the slightest particle of matter of a foreign nature on the edges to be joined being sufficient to unfit it for its purpose. The boy turns the strip around an iron core properly set, and with his thumb-nail places the strips edge to edge until they cohere, keeping this up until the full length is similarly treated. After this the tube of rubber—for such it has now become—is placed on a large wire and bulged at the end that is buried in the amber fluid, giving it the appearance of an air-tight valve at that point. It is next vulcanized and is then finished and ready for use. The critical period of its formation is in the thumb-nail treatment, the failure to connect the edges because of a broken or unevenly trimmed thumb-nail being productive of air-holes, which make the rubber a total loss.

The Battle of the Experts.

THE caution with which expert testimony ought to be considered is exemplified in the late hearing at the Custom House in New York. The chemist analyzed some water-proof cloth, stating that a yard of cloth sixty inches wide contained 6⅗ ounces of pure rubber. Then an expert testified that the piece of cloth was worth 60 cents; afterwards he said it was worth more, finally settling on a price of 90 cents. He subsequently stated that the rubber on it was worth from 38 to 44 cents, and then said it was all guess-work. When asked upon what he based his claim, he stated that he was not a mixer but had bought compounds for about that sum. A very reputable manufacturer then testified that the compound only contained about 40 per cent. of rubber, and one sample only 30 per cent. The chemist having disappeared in the meantime, his statement was called in question, and it was so at variance with other known facts, that little more could be done with it. The importer's invoice was produced, and it was found that 29 cents covered the value of the rubber. This was a low price for 6⅗ ounces of rubber, according to Vianna's way of charging. The piece of cloth 60 inches wide and a yard long cost abroad 49⅗ cents, or 2s. od. ¾. This was a good deal of an eye-opener. With a 30 per cent. duty, which the importer claimed it would cost delivered in this country 62 cents; with a 50 per cent. ad valorem and 50 cents per pound it would cost, approximately, $1.15 per yard; quite enough to check all importation of it under the McKinley law.

Some interesting information was gleaned in the course of the examination. Of course, all agreed that no two mixers made compounds alike. Then the discussion came up as to what was rubber. Was it rubber pure as it came from the forest, or was it whatever you might associate with it? Was caoutchouc what the law meant, or was it vulcanized rubber? The law in one instance had specifically named vulcanized rubber. The appraiser was inclined to believe that manufactured rubber was what was meant, but was upset a little later, when an expert claimed that only 30 per cent. of rubber was in the sample. He thought an analysis in this respect was in order. Then the question of substitutes came up. The importer claimed that "substitutes" was not the proper name, while the contestant stoutly averred that England was the home of the substitute, and that it was advertised and sold there under that name. Some facts regarding the cost of manufacture were made known. The ratio for spreading was a cent and a half per yard in this country, and one cent abroad. The English spreader, it was stated, was used abroad and the calender here; an advantage in the former case. In this country spreading, doubling and vulcanizing cost ten cents per yard for the grade of goods under consideration. A close calculation placed the English cost at about three.

And so it went on, hour after hour, with nothing but conflicting testimony, the point being to ascertain whether the rubber in the cloth was worth more than any other of the component parts, the rate of duty being affected thereby. There was considerable testimony about woolen and cotton cloths, but not much could be gained as a matter of fact beyond the statement in the invoice. All in all, it was a perplexing subject, and the appraiser was not the happiest man at the hearing.

THE Toronto Rubber Co. are arranging to import a number of skilled hands for their new boot and shoe factory at Dalhousie. Boston talent is to be impressed into the service. An export duty as an attachment to our contract law will be the next thing in order.

Additional Trade Notes.

—Spinney, Virtue & Co., of Lynn, Mass., are turning out more than a thousand pair of rubber tennis soles a day. They have this year many new and beautiful designs that suit the trade remarkably.

—Geo. H. Pierce, Superintendent of the Ætna Rubber Mills at Jamaica Plain, Mass., has just returned from a two weeks' vacation in Maine.

—C. J. Bailey, of Boston, the inventor of the Rubber Brushes, that have gone the whole world over, has produced a new specialty that promises to be a tremendous success. By the September issue of THE INDIA RUBBER WORLD it will be all ripe for full description, and our readers shall have it among the first.

—The Fairfield Rubber works of Fairfield, Conn., have put in a new Corliss Boiler, built in Providence, R. I.

—W. Symington, the well-known Liverpool broker, was in New York last month.

—To illustrate how the imports of Centrals to this country are falling off, it is only necessary to state that in 1887 we received in value $913,523 from Colombia, Ecuador and Venezuela against $463,655 in 1890. The supposed cause of this is the withdrawal of labor for the Panama Canal, now abandoned. Of the other Central American States comparative imports are not at hand, and there is a lack of value in them from the fact that trading vessels centre at Greytown, and transfer their rubber there for export. This places imports from Nicaragua very high. The exports from the Central American States aggregate $700,000. Of Africans we use comparatively little. We obtain our supply from England, but direct shipments amount to $80,000 per year. Assams and East Indian shipments amount to about $275,000, although more is received via England. Of gutta percha we only obtain about $15,000 per year direct, and the supply at the moment is almost nil. All this supply from all quarters of the world compares rather absurdly with the imports from Pará, which in 1890 were valued at over $9,000,000, and which in 1888 amounted to nearly $11,000,000.

—A recent visitor in New York was Eugene Schaefer, of the firm of Kohnmescher & Co., of Cincinnati. Thoroughly genial, his business energy is a conspicuous trait.

—Rubber houses having a foreign trade say that the enquiries from abroad are larger this year than ever for all classes of goods. This demand comes from all countries,

—A number of manufacturers are paying much attention to the making of waterproof gaiters. The tendency now is to have everything waterproof in wearing apparel that is used in stormy weather; and in the country feminine pedestrians will upon the least provocation wear waterproof gaiters buttoned high and the skirts of their dresses faced with material of the same nature. In stormy weather one can now go out almost entirely encased in garments impervious to moisture, and all the habiliments are in now such good taste as to render clothing of this sort worn ten years ago appear ludicrously deficient.

—A factory for making a glue and molasses composition for printers' rolls is being advertised far and near in the newspapers as a *rubber* factory.

—The senior partner of the house of J.& J. Schoenfeld Brothers, manufacturers of rubber goods, in the line of surgical work and druggists' sundries, of Paris, France, called at the office of THE INDIA RUBBER WORLD quite recently. The gentleman, who is familiar with English, gave very interesting accounts of the way in which French rubber mills are managed. He is in the United States partly on a pleasure trip, and partly to examine and purchase the latest machinery for his factory.

—At the last meeting of the New England Shoe and Leather Association the subject of "dating ahead" was discussed, and the following committee appointed to look into the matter, and report at the next meeting: W. B. Rice, of Rice & Hutchins; C. B. Lancaster, J. B. Lincoln, of Batchelder & Lincoln; W. F. Gregory of Claflin, Colburn & Co.; C. H. Perkins, of B. E. Cole & Co.; A. M. Stone, of Goddard & Stone, of Worcester; and E. L. Sprague. It was also suggested that the jobbers outside of Boston be invited to co-operate with the manufacturers in this movement.

—It is reported that a German company is about to undertake the gathering of rubber in Chiapas, Mexico. Chiapas borders on the Central American States, has very few rubber trees, and the product of those is very indifferent, being worth about 35 cents per pound in the market.

—Alluding to the report of the annual meeting of the Easthampton rubber thread company, which was published in the July number, it is claimed by some of the parties in interest that it was not the intention of the retiring board to displace Mr. Sawyer from a hand in the management. It is now reported that a suit is about to be brought for the 20 per cent. dividend, on the ground that it could not be rescinded except on the motion of a member of the board, who had originally voted in the affirmative. Parliamentary law, which compels a reconsideration of a vote in this way, is the ground for the legal action. The new directory is one that substantially removes competition in the rubber thread business, but it is expected that the interests of the manufacturers of the goring, web and other articles will most likely be improved thereby.

—Mr. George F. Hodgman, President of the Hodgman Rubber Co., is spending a few weeks at Poland Springs in Maine.

—The Boston Car Spring Co. has been succeeded by the Boston India Rubber Works under the management of Thomas C. Lothrop. The new company announce that they will carry on the same line of business, that of manufacturing mechanical rubber goods of every description with rolls, valves and mould work as a specialty. It will also manufacture Mackintosh clothing in all styles, double and single textures. The salesrooms of the company are at 146 Franklin Street, with the factory at Roxbury (Boston Highlands).

—The clothing manufactured by the Boston Rubber Co. seems to be appreciated in Omaha. In a letter from that city a customer says: "In February, 1888, I ordered for a policeman one of your Yacht Brand Coats. Please make another with same measurements for the same man. He wants the same coat, and is willing to hold up both hands and swear that you 'are the people.' He wore the coat day times, and a night policeman wore it nights, and the coat is not worn out yet."

—Mr. Silas H. Jenkins, the well-known travelling man, who has represented the Hodgman Rubber Co. in the South and Southwest for the past seven years has accepted a position with Bierman, Heidelberg & Co. as their Southern representative. Mr. Jenkins will at once assume his new duties; and while his friends in the South-west will miss him, his acquaintances in the South will doubtless give him a good welcome and many substantial orders.

—Chester J. Pike, selling agent for the Wales-Goodyear Rubber Co., has gone to the "Castle" of the Wild Goose Club in Maine for a summer outing. He is accompanied by wife and children. Judge B. F. Hayes is also one of his party.

—Both factories of the Boston Shoe Co., at Edgeworth and Fells, employing 2700 people, shut down on Friday, July 31, and will start up again August 17, when they will probably run on full time all winter.

—In a recent speech Mr. Ballou, of the Woonsocket Rubber Co., stated that there were annually made in this country twenty millions of rubber boots and shoes at a value of the same amount in dollars. One of the market editors of the New York *Tribune* says the number is twenty-five millions and the value thirty millions of dollars. Mr. Ballou's opportunities for accuracy are greater than the editor's, but unfortunately the latter's chances for the dissemination of his views are much larger.

—The factory at Seatauket, L. I., employing three hundred hands, has shut down on account of a strike. It is expected that an agreement will soon be reached by which operations can be resumed.

—Mr. H. O. Canfield, of Bridgeport, Conn., has just added a new vulcanizing press to his mechanical outfit, the increase being rendered necessary by the rapid growth of his business in recent months. He has now actively at work in his factory, and doing the best sort of service for small mould work, five small presses that were made for A. C. Andrews, when his factory was in operation at New Haven, over twenty years ago.

—In these days when at hotels and on steamboats keys are always attached to tags of some sort, both to give the number of the room and to prevent guests from carrying them away, it is remarkable that more of the hotels do not fall in line with the advance made by certain steamboats. In this case the boats have had hard rubber tags made for the keys, which are bulky enough to remind one that it is not to be carried away, and yet light and pretty, and free from the prongs which are liable to tear the pocket. Nor are they so high priced as to make them out of reach.

—The Columbia Rubber Co. becomes the selling agents for New York State and City of the Boston Woven Hose Co.

—The Navy Department advertise for proposals for five thousand soft and ten thousand hard rubber washers, to be used with armor bolts. Details can be obtained of the Chief of the Bureau of Ordnance at Washington.

—The inaccuracy of newspaper reporters has become proverbial, and consequently people have no right to complain when they are victimized by it. But we have seldom seen a case of more inexcusable inaccuracy than a recent experience has supplied. In the last issue of THE INDIA RUBBER WORLD we published a trade note in reference to a fire in Loewenthal & Morganstern's factory, Jersey City, in which it was stated that the fire occurred; that the firemen quickly responded to the call, "but the flames spread so fiercely that a second and third alarm were given;" that the fire originated from a heater, and that it was the "third fire occurring in the same place within a few weeks." These particulars were found in a daily newspaper report, and they seemed to be such evident statements of fact, that we reproduced them without taking time to verify them, the information coming at a late hour just preceding the printing of that number. We are now advised by Messrs. Loewenthal & Morganstern, that instead of having three fires, they have had but one, and that was a most inconsequential affair, promptly and effectively extinguished by their automatic sprinklers, which acted like a charm; that the services of the local fire department were neither needed nor used; and that the loss was both inconsequential and fully covered by insurance. It gives us pleasure to make these corrections, and we regret very much having been misled by that constitutional faith which humanity seems to repose in cheap reporters.

—Mr. A. Straus, of the New York Belting and Packing Co., arrived home from Europe on the *Columbia*, August 1. Mr. Straus had been absent nine weeks, and had visited England, Germany and France.

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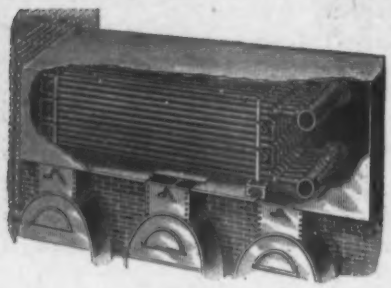
Steam Plant —AND— Improvement Co.



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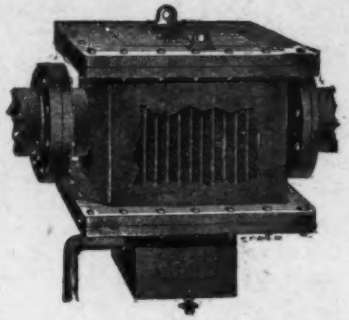

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Esbenite.

ESBENITE is the registered trade-mark of a newly-invented insulating material. According to the patentee a pure cellulose is chemically incorporated with pure mica in the form of finest powder with the addition of magnesia and silicate, thus forming a strong and close-grained artificial mica, with the advantage of the natural slate mica. Esbenite is flexible, and can be moulded into any shape or form. Thus sheets 6 ft. by 4 ft., 3 ft. by 2 ft., from 1 mm. to 1½ in., can be made, or solid blocks of any dimension up to 3 ft. square. Esbenite tubes are now made from ¼-in. to 3 in. diameter or even larger. These tubes are to take the place of the present wooden lead coverings or wire casing. But not only can these esbenite tubes be used for interior wiring, but also for underground and channel conduit wiring. As esbenite is made perfectly waterproof, and does not readily burn, it affords a great protection; even should the wires get hot there is no chance of fire as in wood casing wiring, as esbenite tubes are airproof as well as waterproof. When once fitted and closed at the terminals there is no access of oxygen to feed fire should a wire happen to get hot by accident. The installation of esbenite tubes is extremely simple, and the outer fittings can be made to suit the style of architecture in any building. Esbenite has been tested at several official electrical testing stations, and the result of the tests has given the utmost satisfaction. Esbenite accumulator cases will supply a long-felt want as the material can be made acid-proof, and being very strong cannot be injured by rough usage. The material is produced by a private syndicate of manufacturers in Buckinghamshire, but samples and prices can be had at 52 Queen Victoria Street, E. C.—*Invention.*

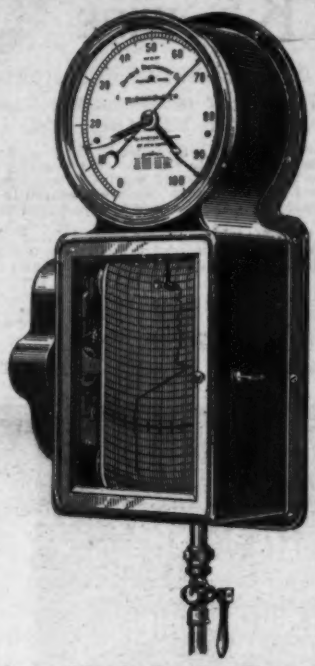
The Trade of the Amazon Valley.

THE United States Consul at Pará writes respecting the trade of the Amazon Valley, which is mainly in control of English companies running steamship lines to Europe and the United States, depending upon the profits derived from the transportation of rubber. These companies do not receive any subsidies from the English Government nor from the General Government of Brazil. Each, however, has contracts with the State Government of Amazonas, but as a matter of fact no cash has yet been paid the companies, the arrearages dating back some three years. The conditions of the contract are such that practically the balance is against the steamship companies. The Booth line, which extends direct from Manaos to New York via Pará is entitled to $24,000 per year. For this they are obliged to perform nine round-trip voyages a year between Manaos and New York until 1891; after that, 12 voyages, or one per month, between Manaos and New York. They are also obliged to carry the mails free, also 3 tons of State cargo free, three first-class and six third-class governmental passengers free on each voyage.

It will be observed that the Brazilian State Government of Amazonas get a full benefit for their $24,000 of "promise to pay." In addition to this the steamship people are required to carry all State cargo exceeding the above 3 tons at 20 per cent. reduction on their tariff rates. They are also obliged to maintain fixed tariff of freight and passenger rates, approved by the Government. The penalties are so severe and the requirements so exacting that the steamship officials do not hesitate to say that they would be better off without any subsidies.—*Iron Age.*

BARON DE GONDORIZ is still in London.

It Cannot Tell a Lie.



FIREMEN and engineers while they are human will make mistakes, and oftentimes are careless. The insurance companies realize this if others do not, and any device that will make boiler accidents less frequent is at once recommended by them. The larger and more progressive manufacturers are not far behind them in securing their property from possible danger. and it is for their information that we show a new recording steam gauge. So patent are its advantages that no description of its workings are necessary. It simply keeps a constant record of the pressure of the steam, day and night and writes it so plainly that any one can read it. It is known as the Electric Recording Pressure Gauge and is manufactured by the Standard Thermometer Co., Peabody, Mass.

The Turk and his Rubbers.

AS dear to the soul of the Turk and Turkess is the rubber as the Sairey Gamp umbrella to the Japanese. They never go out without them, and the men wear really lovely ones, which look quite like patent leather, and which have a dainty little brass spur in the heel to pull them off and on by. They owe their constant use, we learned, to the fact that the Turk, like the Japanese, does not "make a street of his home." If he were not wearing rubbers he would take his boots off on entering the house, as you have to when you want to go into a mosque, unless you are provided with bags to cover them.—*New York Recorder.*

Gutta-Percha Soles.

A NUREMBERG shoe factory (says the *Shoe and Leather Gazette*) is bringing out a new kind of sole for footwear, which is described as being especially durable. The soles are composed of plaited spiral wire filled up with a mixture of gutta-percha and ammonia, so that they acquire great elasticity and wearing properties. They are riveted on as clump soles by means of special nails. The price is about half that of leather soles. The report of a military authority, which tested the soles, is said to be to the effect that both wire plait and filling showed, after long use, almost no sign of wear, and neither cracks nor sears, whilst they do not appear to affect the power of marching.

ROYAL JACKSON, JR., who some months ago left Boston with about $700 belonging to H. Renners & Co., the rubber brokers, has been arrested and makes full confession. Although but nineteen years old he was very bright and a valuable and trusted employé.

The "CLARK" WIRE

INSULATION GUARANTEED WHEREVER USED, AERIAL, UNDERGROUND OR SUBMARINE.

In a letter from the Inspector of the Boston Fire Underwriters' Union, under date of March 29, 1886, he says:—
"A THOROUGHLY RELIABLE AND DESIRABLE WIRE IN EVERY RESPECT."

THE rubber used in insulating our wires and cables is especially chemically prepared, and IS GUARANTEED TO BE WATERPROOF, and WILL NOT DETERIORATE, OXIDIZE or CRACK, and will remain flexible in extreme cold weather, and is not affected by heat. The insulation is protected from mechanical injury by one or more braids, and the whole slicked with Clark's Patent Compound, which is water, oil, acid, and to a very great extent fire-proof. OUR INSULATION WILL PROVE DURABLE WHEN ALL OTHERS FAIL. We are prepared to furnish Single Wires of all gauges and diameter of Insulation for Telegraph and Electric Lights from stock. Cables made to order. We are now prepared to furnish our Clark Wire with a WHITE OUTSIDE FINISH for ceiling cleat work as well as our standard color.

CLARK JOINT GUM should be used for making water-proof joints. This is put up in half-pound boxes, in strips about one foot long and five-eighths inch wide, and when wrapped about a joints, and pressed firmly makes a solid mass.

FOR RAILWAY AND MOTOR use, we make all sizes of stranded and flexible cables with Clark insulation. Wire Tables and price list will be furnished on application to

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We are buyers of every description of RUBBER, ASBESTOS, FIBRE, CELLULOID, OILED CLOTHING, ETC., and are open to quotations with samples.

MONEY CAN BE MADE Manufacturing Rubber Stamps. Send for price of Outfits to J. F. W. DORMAN & CO., 217 East German Street, Baltimore, Md., U. S. A.

Mention the India Rubber World when you write.

Free Want Department.

WANTED—Salesman to travel in Michigan and neighboring States with rubber, oiled clothing, boots and shoes, and other staple articles. Must have influence with trade and be willing to travel exclusively on commission. Address, HENRY WERNER & Co., Detroit, Mich. Liberal inducements to reliable party.

WANTED—A second-hand vulcanizer, about 3 by 8 feet. Address, stating particulars, E. W. HOLT, 83 Broadway, Brooklyn, N. Y.

WANTED—A first-class man in rubber mills in New York City, to superintend the manufacture of hard and soft rubber goods. Address, stating experience and salary wanted, BOX 21, INDIA RUBBER WORLD.

WANTED—A first-class man on all kinds of hand work in making-up room in rubber factory making general mechanical goods. Address RUBBER, P. O. BOX 815, N. Y. City.

A MECHANICAL RUBBER SALESMAN with a good trade wishes to make a change. Address D. A., INDIA RUBBER WORLD.

RUBBER MACHINERY FOR SALE; mills, cracker, vulcanizer, 5 ft. by 12 ft., boiler 3 ft. by 12 ft., bolters, pumps, platform scales, &c. Address BOX 574, Trenton, N. J.

WANTED—A first-class salesman desires to engage with a rubber manufacturing company. Has experience selling mechanical rubber goods, and is acquainted with the trade in New York and vicinity. First-class references guaranteed. Salary and commission preferred. Address ENERGETIC, INDIA RUBBER WORLD.

WANTED—A first-class man as foreman in the mackintosh department of a long established concern. Must be thoroughly conversant with the whole business and able to superintend a large force of makers. State salary wanted. Best of references required. Address H. H. H., INDIA RUBBER WORLD OFFICE.

WANTED—A thoroughly competent superintendent to take charge of a rubber factory equipped for the manufacture of belting, packing, hose, and all other mechanical rubber goods, also boots and shoes. Apply at once stating experience and references. A first-class salary to a competent man. Address "B. B," INDIA RUBBER WORLD Office.

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Especially adapted to the use of
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Mention the India Rubber World when you write.

WANTED—A first-class salesman for a house carrying a general line of rubber and oil clothing, and boots and shoes. Address, stating previous experience and former route of travel, C. C., INDIA RUBBER WORLD Office.

SALESMAN (fourteen years experience on the road and in New York City, Brooklyn and surrounding territory) is desirous of obtaining position with a first-class rubber clothing manufacturer. At references. Address Salesman, 224 Sixth Avenue, New York City.

WANTED—Salesmen for South West, North West and Eastern States to carry a line of rubber clothing, oil clothing, gossamer and mackintosh clothing on commission. A good man can make $25.00 to $75.00 per week. Address giving reference, Smith, INDIA RUBBER WORLD.

WANTED—Foreman for hard rubber department, who is energetic and progressive, and thoroughly understands the business. Good salary for the right man. Address "Manufacturer," care INDIA RUBBER WORLD.

WANTED—A man who thoroughly understands the manufacture of Oil Clothing, to take full charge of a factory on the Pacific Coast. Address, M. INDIA RUBBER WORLD Office.

WANTED—By a first-class firm an experienced reliable salesman on Mechanical Rubber Goods, for New York and vicinity. Address RUBBER, INDIA RUBBER WORLD.

A YOUNG MAN who has had ten years' experience as salesman on the road desires a position as salesman in some first-class store or on the road Best of references. Address, Push, INDIA RUBBER WORLD.

The Rubber Market.

THE market during the past month has been quite active in small sized transactions. One buyer and another have happened in and the aggregate of all transactions has been respectable. During the past four days one broker has sold over 300,000 pounds in very limited amounts. This has generally absorbed a large portion of the available stock, and the amount outside of the holdings of the Pará syndicate is small. The syndicate are as yet doing little, only one large transaction being credited to them.

The fact that Vianna has formed a powerful syndicate in Europe, which leads many to believe that he is well able to pursue his course into the next crop, has not led him to any actions which would make clear his course in the future. He and his colleagues now own 95 per cent. of the visible supply of Pará rubber, the statistics of which are given in another column. It is said that he has not been active in the buying movement in Pará, and this would tend to the belief that he has not formulated all his plans and is letting matters drift for the present. He has not, however, as a large broker says in a jocular way, cabled his death yet.

Prices in New York have lately had narrow fluctuations in the minor dealings outside of the syndicate, who are pursuing their course of keeping out of the market. Pará has been as high as 78@80, and is quoted at the present writing at 79 cents. Some coarse has been sold as low as 49 cents, but a large sale was made by the syndicate at 56 cents.

At Pará prices have followed exchange, which has declined seriously on account of a new issue of paper money by the Government. Uprivers have sold as high as 4100 milreis and islands at 3900 milreis. These are about the prices ruling at the present time.

The low price of exchange makes any judgment with regard to the course of the market based upon these prices valueless. Exchange is now at 15⅛@15¼.

The receipts at New York during the month were as follows:

July 21. *Advance*, 20 tons.

Aug. 5. *Basil*, 50 tons 50 caucho.

Finance, 200 tons 20 caucho.

On passage there is the *Lisbonense*, with 50 tons, the *Gregory*, with 20 tons, and the *Seguranza*, with 90 tons. *En route* to Europe there are 290 tons.

The receipts during July at Pará were 550 tons, and for ten days in August 230 tons. It is expected that the receipts this month will be in the neighborhood of 1100 tons, and from this time on receipts will naturally increase. In 1890, during September there were receipts of 3375 tons.

Mail advices from Liverpool report the market for fine Pará very firm with small sales. In the mediums there were only small transactions. Centrals were dull, small auction offerings having been withdrawn in a number of instances. Pará was quoted August 1 at 3s 4d. Borneo, 1s 9d. Madagascar 2s 3d. Assam first quality 2s. Second quality 1s 9d. Mozambique Red Ball 2s. Sausage 2s 10d. White Ball 1s 8d. Liver 1s 8d.

In the New York markets Centrals were in light supply at fair prices, and the same is true of Africans.

Simpson & Beers, New York, report the condition of the money market as follows:

For the past month it has been almost impossible in or out of the city to sell the best single and double name paper. This has not been owing to any distrust of the paper, but simply to the strained condition and general distrust existing throughout the country. Banks generally appear to be loaning their surplus money upon approved collateral, waiting to see if the serious failures are over.

The rubber people have been doing a very conservative business for some time. We find little to indicate much improvement in the market for paper for some time.

The latest New York quotations are:

Para, fine, new	79-80	Tongues	35-38
Para, fine, old	81-84	Sierra Leone	39-45
Para, coarse, new	49-51	Benguela	44-45
Para, coarse, old	52-55	Congo Ball	38-42
Caucho (Peruvian) strip	41-42	Small Ball	37-40
Caucho (Peruvian) ball	50-52	Flake, Lump and Ord.	25-26
Mangabeaira, sheet	37-39	Mozambique, red ball	
Esmeralda, sausage	49-51	Mozambique, white ball	
Guayaquil, strip	38-40	Madagascar, pinky	55-58
Virgin Scrap	——	Madagascar, black	41-48
Carthagena, strip	33-36	Borneo	32-44
Nicaragua, scrap	46-48	Gutta percha, fine grade	140@150
Nicaragua, sheet	44-46	Gutta percha, medium	100
Guatemala, sheet	40-42	Gutta percha, hard white	100
Thimbles	41-42	Gutta percha, lower sorts	80-85

Belting is somewhat dull. A good demand has sprung up from the West for threshing machines. Packing is in fair request.

In hose there is little doing; garden hose being very dull.

There is a movement on foot to form a combination of the cotton hose people, but unless it embraces the Lawrence and Fitchburg mills, of which there is considerable doubt as to one or both, but little can be expected of the efforts in that direction.

Dealers in mechanical goods look with little interest on the Cuban reciprocity treaty. The reduction of 50 per cent. in the duties ought to increase our exports, but the treaty with Brazil has not as yet produced results in any line that increase hopefulness in regard to the new departure.

The business in boots and shoes seems to be very good. There is a demand greater than the supply for lumbermen's goods, and manufacturers do not like to increase their patterns and lasts to keep up with the call for these goods. A great many goods are being shipped West at low rates.

The demand for clothing is fair.

A good business from the West is noted.

The Custom House authorities have still under consideration the question as to whether cloths shall be entered under the duty applicable to cloth or rubber.

Hard rubber goods are in fair request. There is not so much doing as usual in insulation. There has been a very fair business done in yachting and camping specialties.

MR. VICE-CONSUL PICKERSGILL, writing from Madagascar, in his report to the Foreign Office, avers that "India rubber no longer appears in the Antananarivo market, except as a rarity. The little that is exported goes direct from the forest to the coast." As the result of "twelve months scratching at the surface of the country's mineral deposits" was, last year, to yield a rough total of £110,000 worth of gold, this easy acquisition of wealth may have something to do with the neglect of rubber.

THE Boston Belting Co. has recently issued an exceedingly handsome calendar chart, which already has taken the place of honor on the walls of many leading rubber stores. The design of the chart, which is by James Bennett Forsyth, the general manager, shows in the upper half a bird's-eye view of the extensive plant of the company in Roxbury, Mass. While to the left of the centre is a picture of Boston Light, to the right a view from the upper Amazon, and in the lower half is a fine view of a South American Indian gathering the rubber sap and another smoking it over a fire of palm nuts. In the centre is a calendar, which very neatly yet effectively advertises the progressive company that publish it.

H. O. CANFIELD, - Bridgeport, Conn.

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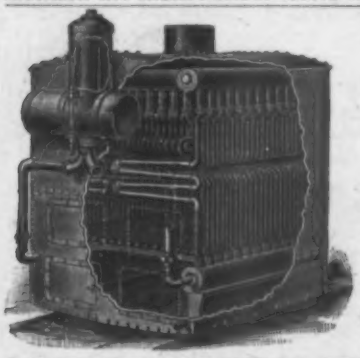

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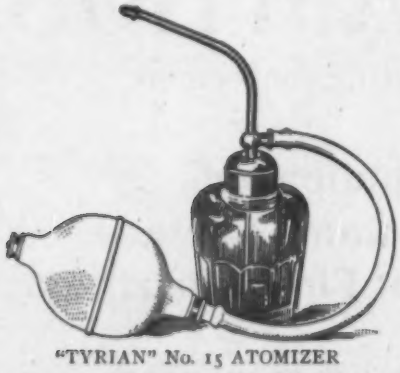

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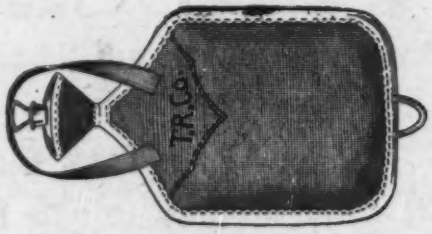

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